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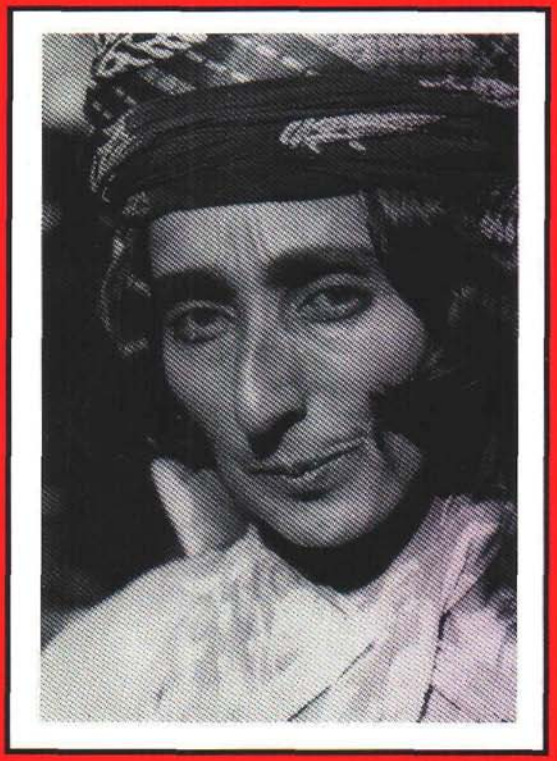

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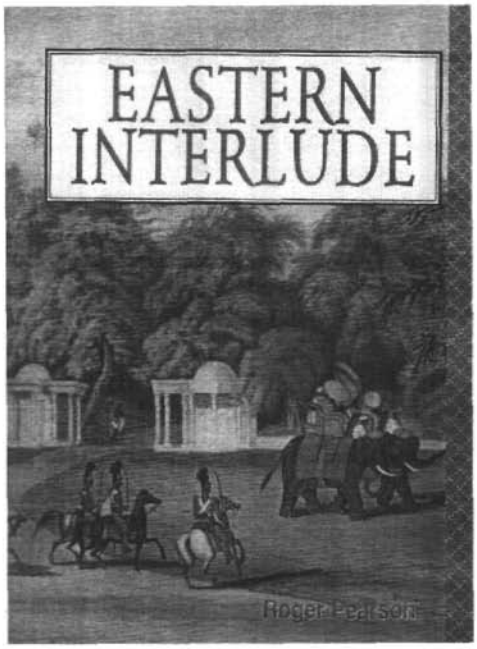

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Body Build Structure of Young Female Volleyballers (Aged 13 – 16) and their Performance in Competitions

Raini Stamm[1]
University of Tartu, Estonia

The present paper studies the anthropometric structure of 46 young female volleyballers (aged 13-16 years) – 49 basic measurements, including 11 skinfolds, and the significance of the anthropometric factor in predicting proficiency in the game. The proficiency of 32 players at competitions was assessed by an original volleyball recording computer program *Game*.

The regularity of the body as a whole, interconnections between all the characteristics, and the fact that all the characteristics could be determined by height, weight and age (within 20-90%) gave reason to believe that, in principle, all the body characteristics measured could be applied to describe the players' peculiarities of body build necessary for accomplishing volleyball tasks.

The index of proficiency that was used to describe players' proficiency in the game correlated statistically significantly with 14 basic measurements. The linear models composed of these enabled us to predict the efficiency of serve within 32%, efficiency of reception within 50% and, very reliably, the efficiency of block, feint and attack within 80%, 83% and 71% respectively.

Key Words: Young female volleyball players' anthropometry; Body build structure; Volleyball performance.

Introduction

The adolescence period is characterized by great changes in growth, development and maturation, which are influenced by individual constitutional peculiarities and manifest themselves in the great variability of anthropometric characteristics. Detailed anthropometric investigation is needed in order to find the regularities of body structure at this age period and to develop methods for classifying the results (Eiben 1985, 2001; Tutkuviene 1986; Prokopec and Stehlik 1988; Claessens et al. 2001; Veldre et al. 2002).

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The Centre for Physical Anthropology at the University of Tartu has attempted to study the whole body structure throughout the adolescence period (Thetloff 1992; Kaarma et al. 1997, 2000; Saluvere et al. 1998, Maiste 1999). The results have shown the existence of a principally similar anthropometric structure of the body in all age groups. The body as a whole has been found to consist of characteristics that are in significant mutual correlation; and that the leading variables are height and weight, and all the other variables are essentially determined by height, weight and age. Body measurements can best be classified by a 5 SD classification of height and weight.

Respective studies of young female volleyballers' body build are scarce. Usually they have been limited to weight, height, a few girths and measuring of body fat content (Thissen-Milder and Mayhew 1991; Häkkinen 1993; Malina 1994); therefore literature lacks a common stance on which and how many body measurements should be used in volleyball studies. The author's preliminary studies to demonstrate the need for additional anthropometric research (Stamm et al. 2001, 2002) have yielded positive results.

Considering what has been said above, we set ourselves the aim of conducting a more detailed anthropometric study in order to establish the regularities of body build in young female volleyballers and to find which body measurements could be essential for the success of female volleyballers of the up to 16 years age group at competitions.

Material and Methods

Subjects

The sample consisted of 46 young female volleyball players aged 13 – 16 years. All of them practised volleyball regularly (in 6 teams) and participated in young female volleyballers' championships in the age group of up to 16-year-olds. The players were informed about the essence of the studies planned, and they as well as their parents consented to voluntary testing. The study was approved by the Medical Ethics Committee of the University of Tartu.

Measurement Procedures

Anthropometric Research

The girls were healthy, and their sexual development

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corresponded to Tanner's (Tanner 1962) stages III-IV. The methodology of the anthropometric study relied on the long-term research carried out on many populations at the Centre for Physical Anthropology, University of Tartu (Kaarma 1981; 1995; Kaarma et al. 1996).

Anthropometric measurements were taken by a trained anthropometrist, who had previously shown test-retest reliability of $r > 0.90$. Three complete sets of measurements were carried out and the mean of the three values was used.

The girls were measured according to the classical methods of Martin (Knussmann 1988). For measuring the skinfolds, the methodology provided in Knussmann's handbook (Knussmann 1988, p. 274) was followed.

To measure lower extremity length, we applied the method of K. S. Jatsuta (Jatsuta 1923) that has been widely accepted in Russia and has been the principal method used in Estonia since J. Aul's work (Aul 1977).

A total of 49 body measurements, including 11 skinfolds, were taken.

Players' Proficiency

To assess young volleyball players' proficiency at competitions, the original volleyball recording program *Game* devised by the author (Nõlvak 1995) was used. This program has been applied by the Estonian Volleyball Federation and has been introduced in the International Journal of Volleyball Research (Stamm et al., 2000).

The results were recorded at Estonian Championship and Cup matches for up to 16-year-olds with the participation of 32 players under study.

All the girls played in the teams where they practise. The games were recorded within three months in different cities of Estonia where the matches took place. The assessment of each player was based on at least four matches. Technically, the assessment of players' proficiency proceeded as follows: during the game, a recording assistant (a volleyball expert) fixed the performance of each technical element by each player of one team by pressing, according to the program, three keys on the computer keyboard. This enabled us to record: (1) the element of the game that was performed; (2) grade for its performance on a five-point scale (1 – excellent ... 5 – failed); (3) the number

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of the player who performed the element.

Each player's proficiency in all the elements they performed was calculated according to the following formula:

$$\text{Index of proficiency} = \frac{\text{number of performances} \times \text{maximum grade} - \text{sum of grades}}{(\text{maximum grade} - 1) \times \text{number of performances}}$$

Proficiency can range from 0 to 1, where 1 means that in all the cases the element was performed excellently, and 0 – a failure in all the cases.

The data were processed using the SAS-system at the Institute of Mathematical Statistics, University of Tartu. Comparison of means (t-test), correlation analysis and linear regression with stepwise argument selection were used.

Results

Results of Anthropometric Research

Basic statistics of single anthropometric variables in age classes and their correlation with age are presented in Table 1. As the table shows, significant differences could be noticed in the case of 14 variables. Increase in age caused a significant increase in height, weight, suprasternal height, xiphoidal height, head-neck length, sternum length, upper limb length, horizontal arms spread, acromial breadth and pelvis breadth. As for circumferences, there was an increase in pelvis circumference, middle thigh, upper leg and forearm circumferences. Limb bones thicknesses – humerus, femur, ankle and wrist breadth – and lower leg and wrist circumference did not increase significantly. There was no significant difference in skinfolds.

Comparing the girls' height and weight with Estonian averages in respective age groups, we found that volleyballers surpassed their peers in all age groups.

In order to find which anthropometric characteristics should be used in volleyball studies and how they could be systematized, we carried out a special study of the anthropometric structure of the body as a whole. Correlation analysis showed that the body as a whole is formed of a complex of body measurements that are in mutual statistically significant correlation, and all of them have the strongest correlation with body height and weight. Thus the leading characteristics of the system are height and

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weight, which determine an essential part of the variability of all the other characteristics.

Predicting the variability of all basic measurements from height, weight and age (Table 2), we managed to demonstrate that in 1/3 of cases height, weight and age determine the variability of other basic measurements with a description rate of up to 50%, and in 2/3 of cases the description rate reached 50 – 90%. Along with height and weight, the impact of age in regression models was essential in only four cases (lower limb length, humerus breadth, side and subscapular skinfold).

This implies that each basic characteristic can be used in studies, because, in addition to representing a concrete measurement of the body, each basic characteristic also essentially represents the body as a whole.

We also attempted to find an answer to the question how and whether it is possible to classify basic anthropometric measurements. We used a scheme of five SD-classes devised by the Centre for Physical Anthropology (Fig. 1). The subjects were divided into three classes of concordance between height and weight (small height – small weight, medium height – medium weight and big height – big weight) and two classes of disconcordance (pycnomorphous: big weight – small height, and leptomorphous: small weight – big height). Despite the relatively small number of subjects (n = 46), we managed to demonstrate systematic changes in the height, breadth and depth measurements of the body (Table 3). The impact of age on the division between classes proved to be insignificant.

Assessment of Players' Proficiency

Out of the 46 girls who were studied anthropometrically, 32 participated in competitions, where their performance was recorded by the computer program *Game*. For all players and all elements of the game, we calculated the index of proficiency. For the whole group, the mean index of proficiency at serve was 0.545 (SD = 0.279), at reception 0.513 (SD = 0.183), at feint 0.657 (SD = 0.246), at block 0.523 (SD = 0.360) and at attack 0.563 (SD = 0.226). The mean value of the proficiency index was 0.539 (SD = 0.161).

All the anthropometric variables of the girls who participated in competitions were correlated with the index of proficiency for all elements of the game. Proficiency correlated

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significantly with 14 body measurements. These were height, weight, xiphoidal height, suprasternal height, chest, waist and hip circumferences, relaxed arm circumference and flexed and tensed arm circumference, upper thigh and lower leg circumference, wrist circumference and wrist breadth. No significant correlation with age was found.

From these anthropometric variables we calculated by means of stepwise procedure the best linear regression models for predicting proficiency in different elements of the game. The results are presented in Table 4.

The efficiency of serve (32%) was facilitated by greater xiphoidal height and arm circumference. Efficiency of reception (50%) was linked to bigger weight, bigger suprasternal height and bigger wrist breadth. Block was best performed (80%) by girls with bigger height and weight. For feint the most essential (83%) characteristics were bigger xiphoidal height, arm circumference and hip circumference. Attack was also more successful (71%) in girls with bigger weight and lower leg circumference.

Discussion

The results of our anthropometric study confirmed that the whole body anthropometric model of 13 – 16-year-old young female volleyballers displays the same regular structure that has been described in literature (Thetloff 1992; Kaarma et al. 1997, 2000; Saluvere et al. 1998; Maiste 1999) for other samples of schoolgirls.

We found that the girls' body structure consists of basic characteristics that are in mutual significant correlation, and the leading characteristics in the system are height and weight. All single characteristics are essential in the system, and all of them are determined by height, weight and age (20 – 90%) and can be classified into 5 SD classes of height and weight. In our opinion, such a regularity of the body as a whole shows that, in order to characterize the anthropometric factor necessary for accomplishing volleyball tasks, we might initially use all the basic anthropometric characteristics as essential parts of the system. The following correlation analysis established the most significant of them for our concrete study.

When assessing volleyball proficiency, we applied an analogous approach. The index of proficiency that was

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calculated for all the girls and all the elements of the game showed statistically significant correlation with 14 basic measurements. The linear prediction models composed of them showed that the anthropometric factor was essential for the performance of all the elements of the game. Thus, the models composed of basic anthropometric variables enabled us to predict the efficiency of serve within 32%, efficiency of reception within 50% and, very reliably, the efficiency of block, feint and attack, respectively within 80%, 83% and 71%.

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Fig. 1. Body build classes

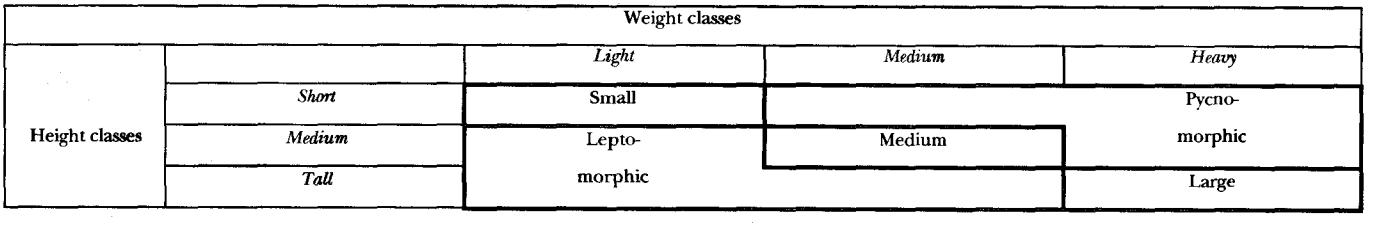

Table 1

Means and standard deviations of basic anthropometric measurements in age groups of young female volleyballers (n=46) and their correlations with age, significance level $\alpha = 0.05$

No	Variable	Total		13 years n=10		14 years n=14		15 years n=12		16 years n=10		Statistical by significant correlation with age (r)
		$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	
2	Weight (kg)	56.778	9.504	54.48	13.84	52.55	6.65	58.26	4.20	60.46	9.47	0.291
3	Height (cm)	167.23	6.09	163.19	7.23	164.08	4.41	168.43	5.30	169.60	5.50	0.429

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4	Suprasternal height (cm)	135.26	5.50	132.83	6.78	133.31	3.94	137.14	5.12	138.14	4.97	0.395
5	Xiphoidal height (cm)	120.46	5.07	118.95	5.96	118.64	3.74	122.50	5.02	122.08	5.10	0.295
6	Head-neck length (cm)	30.99	0.96	30.36	1.20	30.76	1.05	31.29	0.64	31.46	0.75	0.413
7	Sternum length (cm)	14.85	1.78	13.88	1.56	14.67	2.33	14.64	1.63	16.06	1.06	0.363
8	Abdomen length (cm)	35.44	5.37	35.68	6.66	34.69	5.97	37.39	4.60	33.92	3.72	-
9	Trunk length (cm)	50.24	5.52	49.56	7.29	49.36	5.81	52.03	5.23	49.98	3.31	-
10	Upper body length (cm)	66.95	5.40	64.36	4.52	67.65	7.73	68.10	3.78	67.20	3.38	-
11	Lower body length (cm)	99.27	7.25	98.83	6.63	96.43	10.00	100.33	5.80	102.40	2.97	-
12	Upper limb length	72.69	4.09	71.63	5.83	70.74	2.29	73.77	3.83	75.21	2.87	0.375
13	Lower limb length	87.60	5.62	87.50	3.72	85.76	6.56	88.68	6.36	88.99	4.88	-
14	Horizontal arms spread (cm)	167.51	8.35	164.05	9.41	163.91	5.11	169.00	8.14	174.22	7.41	0.464
15	Biacromial breadth (cm)	35.33	1.62	34.90	2.14	34.89	0.76	35.33	1.60	36.35	1.68	0.319
16	Chest breadth (cm)	23.88	1.50	23.80	2.11	2.43	1.37	24.13	1.26	24.30	1.21	-
17	Waist breadth (cm)	21.90	1.73	22.15	2.16	21.32	1.61	21.58	1.12	22.85	1.81	-
18	Pelvis breadth (cm)	25.67	1.54	24.90	1.82	25.39	1.40	26.00	1.04	26.45	1.66	0.367

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19	Chest depth (cm)	16.23	1.25	16.40	2.12	15.79	0.96	16.38	0.93	16.50	0.71	-
20	Abdomen depth (cm)	15.48	1.31	15.15	2.11	15.36	0.93	15.25	0.94	16.25	0.98	-
21	Femur breadth (cm)	8.69	0.57	8.54	0.76	8.64	0.50	8.78	0.52	8.83	0.53	-
22	Ankle breadth (cm)	6.86	0.46	6.84	0.64	6.76	0.32	6.90	0.43	6.96	0.50	-
23	Humerus breadth (cm)	6.17	0.39	6.22	0.44	6.90	0.33	6.21	0.43	6.17	0.41	-
24	Wrist breadth (cm)	5.07	0.29	4.91	0.40	5.13	0.27	5.08	0.23	5.13	0.25	-
25	Head circumference (cm)	34.96	1.44	54.93	1.49	55.32	1.18	54.60	1.60	54.91	1.62	-
26	Neck circumference (cm)	31.50	1.71	31.46	2.55	31.41	1.43	31.41	1.43	31.12	1.86	-
27	Upper chest circumference (cm)	81.23	4.97	81.64	7.53	79.52	4.04	82.10	3.69	82.16	4.47	-
28	Lower chest circumference (cm)	73.96	5.36	74.15	7.37	72.17	4.72	74.67	3.51	75.57	5.88	-
29	Waist circumference (cm)	67.62	5.65	67.65	7.84	65.83	3.96	67.45	2.63	70.32	7.32	-

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30	Pelvis circumference (cm)	79.49	6.30	77.50	9.53	77.26	4.73	81.48	3.50	82.20	5.88	0.324
31	Hip circumference (cm)	85.13	9.35	85.11	10.42	81.34	10.83	88.89	3.02	85.93	10.27	-
32	Upper thigh circumference (cm)	55.09	5.94	54.20	8.16	52.94	5.50	56.80	1.99	57.12	6.65	-
33	Middle thigh circumference (cm)	46.49	4.79	44.72	6.31	45.26	4.05	47.87	3.14	48.34	5.21	0.308
34	Upper leg circumference (cm)	34.16	2.68	33.26	3.39	33.26	2.64	35.27	1.77	35.01	2.44	0.304
35	Lower leg circumference (cm)	22.04	1.58	21.63	2.39	21.63	1.19	22.33	2.23	22.70	1.37	-
36	Arm circumference (cm)	24.87	2.41	24.17	3.59	24.22	1.74	25.65	1.54	25.55	2.50	-
37	Arm circumference flexed and tensed (cm)	26.84	2.57	26.25	3.91	26.28	1.85	27.51	1.60	27.40	2.79	-
38	Forearm circumference (cm)	22.45	1.60	21.92	2.15	21.91	1.39	22.89	1.14	23.18	1.48	0.328

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39	Wrist circumference (cm)	15.73	0.94	15.58	1.54	15.58	0.69	15.73	0.75	16.08	0.71	-
40	Chin skinfold (cm)	0.64	0.23	0.70	0.31	0.57	0.19	0.63	0.18	0.68	0.25	-
41	Chest skinfold (cm)	0.67	0.27	0.76	0.35	0.56	0.18	0.71	0.21	0.70	0.35	-
42	Side skinfold (cm)	0.82	0.40	0.94	0.49	0.74	0.42	0.82	0.22	0.84	0.45	-
43	Waist skinfold (cm)	1.27	0.50	1.31	0.73	1.16	0.35	1.26	0.34	1.39	0.61	-
44	Suprailiacal skinfold (cm)	0.83	0.39	0.89	0.59	0.79	0.37	0.88	0.29	0.77	0.28	-
45	Umbilical skinfold (cm)	1.03	0.39	1.09	0.58	0.90	0.25	1.08	0.37	1.09	0.38	-
46	Subscapular skinfold (cm)	1.03	0.41	1.19	0.60	0.93	0.39	1.08	0.23	0.95	0.37	-
47	Biceps skinfold (cm)	0.81	0.31	0.91	0.39	0.71	0.25	0.86	0.25	0.78	0.35	-
48	Triceps skinfold (cm)	1.27	0.40	1.31	0.53	1.18	0.37	1.42	0.27	1.16	0.43	-
49	Thigh skinfold (cm)	2.14	0.56	2.01	0.56	1.91	0.50	2.42	0.33	2.26	0.73	-
50	Calf skinfold (cm)	1.34	0.34	1.28	0.35	1.20	0.24	1.44	0.38	1.48	0.34	-

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Table 2

Linear models for young female volleyballers (n=46) basic anthropometric measurements by age, weight and height.

No	Variable	Regression coefficients				
		Intercept	*Age*	*Weight*	*Height*	R^2
6	Head-neck length (cm)	13.14	0.18	-0.01	0.09*	0.38
7	Sternum length (cm)	-13.75	0.41	-0.06	0.16*	0.26
11	Lower body length (cm)	-37.72	-0.53	-0.012	0.87*	0.47
12	Upper limb length (cm)	-13.63	0.20	0.01	0.20*	0.60
13	Lower limb length (cm)	-38.85	-1.14*	-0.07	0.88*	0.64
14	Horizontal arms spread (cm)	-22.28	1.25	0.07	1.06*	0.63
15	Biacromial breadth (cm)	21.45	0.18	0.08*	0.04	0.40
16	Chest breadth (cm)	22.99	-0.04	0.15*	-0.04	0.66
17	Waist breadth (cm)	22.57	-0.05	0.18*	-0.06	0.67
18	Pelvis breadth (cm)	4.61	0.15	0.06*	0.09*	0.51
19	Chest depth (cm)	15.43	-0.13	0.12*	-0.02	0.60
20	Abdomen depth (cm)	15.21	0.15	0.11*	-0.05	0.45
21	Femur breadth (cm)	6.39	0.05	0.04*	0.000	0.40
22	Ankle breadth (cm)	3.96	-0.04	0.03*	0.01	0.36
23	Humerus breadth (cm)	2.03	-0.10*	0.01	0.03*	0.40
24	Wrist breadth (cm)	1.99	0.004	0.005	0.01*	0.21
25	Head circumference (cm)	49.52	-0.34	0.05*	0.04	0.23
26	Neck circumference (cm)	31.67	-0.16	0.17*	-0.04	0.64
27	Upper chest circumference (cm)	99.83	-0.39	0.64*	-0.29*	0.92
28	Lower chest circumference (cm)	94.81	-0.05	0.66*	-0.34*	0.84
29	Waist circumference (cm)	76.15	0.14	0.61*	-0.27	0.68
30	Pelvis circumference (cm)	61.08	0.69	0.66*	-0.17	0.79
31	Hip circumference (cm)	74.01	-0.23	0.73*	-0.16	0.41
32	Upper thigh circumference (cm)	39.08	0.18	0.61*	-0.13	0.75
33	Middle thigh circumference (cm)	36.57	0.48	0.51*	-0.16	0.79
34	Upper leg circumference (cm)	24.86	0.22	0.27*	-0.06	0.76
35	Lower leg circumference (cm)	7.29	-0.03	0.13*	0.049	0.73
36	Arm circumference (cm)	28.12	0.18	0.29*	-0.13	0.89
37	Arm circumference flexed and tensed (cm)	29.94	0.01	0.32*	-0.13*	0.90
38	Forearm circumference (cm)	17.79	0.18	0.17	-0.04	0.80
39	Wrist circumference (cm)	11.80	-0.04	0.08*	-0.001	0.62
40	Chin skinfold (cm)	1.99	-0.02	0.02*	-0.01*	0.43

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41	Chest skinfold (cm)	1.46	-0.04	0.02*	-0.01	0.63
42	Side skinfold (cm)	3.71	0.06*	0.05*	-0.02	0.73
43	Waist skinfold (cm)	4.39	-0.02	0.06*	-0.04*	0.67
44	Suprailiacal skinfold (cm)	3.87	-0.06	0.04*	-0.03*	0.57
45	Umbilical skinfold (cm)	4.28	-0.009	0.05*	-0.03*	0.70
46	Subscapular skinfold (cm)	5.40	-0.08*	0.05*	-0.03*	0.66
47	Biceps skinfold (cm)	2.49	-0.06	0.03*	-0.02	0.52
48	Triceps skinfold (cm)	5.13	0.04	0.04*	-0.03	0.55
49	Thigh skinfold (cm)	3.34	0.09	0.05*	-0.03*	0.44
50	Calf skinfold (cm)	-0.59	0.04	0.02*	0.002	0.35

* statistically significant variables in the model. All models are statistically significant on level 0.05.

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Table 3

Means and standard deviations of basic anthropometric measurements in a 5SD height-weight classification of young female volleyballers (n=46). Comparison of means of different classes (α=0.05)

No	Variable	1. Small (n=8)		2. Medium (n=8)		3. Large (n=6)		Signifi-cance	4. Pycnomorphs (n=13)		5. Leptomorphs (n=11)		Signifi-cance
		$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	1-3	$\bar{x}$	SD	$\bar{x}$	SD	4-5
1	Age	13.63	1.06	14.88	0.83	15.00	1.26	-	14.54	0.97	14.45	1.04	-
2	Weight (kg)	44.56	4.02	54.22	2.63	68.58	7.16	+	60.87	7.41	53.75	5.20	+
3	Height (cm)	158.39	3.31	166.96	1.15	174.52	3.62	+	163.75	3.15	169.77	4.86	+
4	Surpasternal height (cm)	128.40	2.45	136.01	1.18	142.93	3.09	+	132.95	2.90	138.24	5.10	-
5	Xiphoidal height (cm)	114.23	2.61	121.45	2.07	126.8	3.35	+	119.04	2.49	122.47	5.59	-
6	Head-neck length (cm)	29.99	1.01	30.95	0.70	31.58	0.97	+	30.81	0.70	31.54	0.99	+
7	Sternum length (cm)	14.18	2.28	14.56	1.21	16.07	1.25	-	13.91	2.16	15.76	1.12	+
8	Abdomen length (cm)	31.15	2.52	35.05	1.73	36.10	2.91	+	38.26	6.39	35.15	6.67	-
9	Trunk length (cm)	45.33	1.32	49.61	1.90	52.17	2.34	+	52.17	7.18	50.92	6.45	-
10	Upper body length (cm)	66.15	11.92	67.23	2.09	68.98	2.98	-	66.01	4.30	67.35	3.19	-
11	Lower body length (cm)	92.24	11.92	99.74	2.49	105.53	1.90	+	97.75	3.44	102.42	6.27	+

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12	Upper limb length (cm)	68.93	4.10	73.64	3.14	76.18	4.03	+	71.11	2.81	74.72	3.42	+
13	Lower limb length (cm)	83.01	4.85	88.95	2.08	93.30	1.93	+	84.19	5.64	90.87	4.25	+
14	Horizontal arms spread (cm)	162.19	11.48	169.23	4.05	175.50	5.66	+	163.32	6.38	170.74	6.89	+
15	Biacromial breadth (cm)	33.81	1.56	35.44	0.98	36.33	2.34	+	35.61	1.45	35.45	1.25	-
16	Chest breadth (cm)	22.56	1.45	23.25	0.89	25.50	0.71	+	24.77	1.24	23.36	1.16	+
17	Waist breadth (cm)	20.69	1.51	21.31	1.13	24.08	1.59	+	22.73	1.47	21.05	1.06	+
18	Pelvis breadth (cm)	24.19	1.62	25.94	0.78	27.00	2.05	+	25.69	1.38	25.82	1.05	-
19	Chest depth (cm)	15.06	1.05	16.06	0.78	17.17	1.03	+	16.85	1.38	15.95	0.91	-
20	Abdomen depth (cm)	14.31	1.67	15.63	1.03	16.75	0.69	+	15.96	1.23	14.95	0.57	+
21	Femur breadth (cm)	8.05	0.49	8.66	0.39	9.05	0.68	+	8.90	0.49	8.75	0.44	-
22	Ankle breadth (cm)	6.48	0.46	6.65	0.44	7.03	0.66	-	7.01	0.35	7.02	0.29	-
23	Humerus breadth (cm)	5.88	0.28	6.18	0.30	6.57	0.37	+	6.10	0.41	6.23	0.36	-
24	Wrist breadth (cm)	4.57	0.32	5.01	0.23	5.20	0.28	+	5.10	0.22	5.23	0.21	-
25	Head circumf. (cm)	54.68	1.31	54.31	1.79	55.77	1.18	-	55.17	1.62	54.95	1.11	-
26	Neck circumf. (cm)	29.80	0.98	30.95	1.08	33.83	1.50	+	32.31	1.47	30.91	0.94	+
27	Upper chest circumf. (cm)	76.29	2.73	79.71	2.24	86.18	3.02	+	85.29	4.50	78.42	2.72	+
28	Lower chest circumf. (cm)	70.10	4.29	72.09	2.95	79.50	5.48	+	77.62	5.05	71.26	3.07	+

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29	Waist circumf. (cm)	63.05	3.23	65.59	2.40	74.88	6.70	+	70.70	5.04	64.84	2.58	+
30	Pelvis circumf. (cm)	71.79	4.46	79.55	4.13	87.45	4.99	+	82.71	4.41	76.89	3.23	+
31	Hip circumf. (cm)	75.91	11.73	86.89	3.39	88.17	13.99	-	89.01	8.58	84.31	2.64	-
32	Upper thigh circumf. (cm)	47.31	4.54	55.34	1.96	59.60	8.00	+	59.03	3.21	53.45	3.66	+
33	Middle thigh circumf. (cm)	41.11	3.74	46.50	2.74	52.02	5.46	+	49.10	3.06	44.31	2.59	+
34	Upper leg circumf. (cm)	30.88	1.03	33.79	1.84	37.20	2.34	+	35.61	2.12	33.46	1.90	+
35	Lower leg circumf. (cm)	19.94	1.12	21.30	0.60	23.95	0.84	+	22.71	1.03	22.29	1.31	-
36	Arm circumf. (cm)	22.10	1.77	24.34	1.09	27.13	2.09	+	26.88	1.52	23.67	1.35	+
37	Arm circumf. flexed and tensed (cm)	23.84	1.53	26.43	1.09	27.13	2.09	+	28.88	1.94	25.52	1.27	+
38	Forearm circumf. (cm)	20.44	0.99	21.69	0.70	24.05	1.49	+	23.67	1.07	22.14	0.87	+
39	Wrist circumf. (cm)	14.64	0.64	15.33	0.70	16.58	0.78	+	16.22	0.80	15.77	0.68	-
40	Chin skinfold (cm)	0.52	0.12	0.59	0.17	0.80	0.28	+	0.76	0.25	0.52	0.14	+
41	Chest skinfold (cm)	0.51	0.15	0.63	0.18	0.92	0.29	+	0.83	0.28	0.51	0.19	+
42	Side skinfold (cm)	0.56	0.15	0.73	0.18	1.20	0.48	+	1.10	0.40	0.55	0.16	+
43	Waist skinfold (cm)	0.91	0.32	1.09	0.30	1.73	0.43	+	1.63	0.49	0.97	0.31	+
44	Suprailiacal skinfold (cm)	0.54	0.14	0.83	0.31	1.10	0.32	+	1.13	0.39	0.55	0.20	+

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45	Umbilical skinfold (cm)	0.76	0.28	0.94	0.19	1.30	0.29	+	1.32	0.42	0.80	0.30	+
46	Subscapular skinfold (cm)	0.80	0.15	1.00	0.24	1.25	0.35	+	1.35	0.51	0.77	0.28	+
47	Biceps skinfold (cm)	0.64	0.22	0.75	0.24	1.07	0.36	+	0.98	0.21	0.62	0.29	+
48	Triceps skinfold (cm)	0.98	0.30	1.15	0.27	1.45	0.31	+	1.65	0.26	1.00	0.33	+
49	Thigh skinfold (cm)	1.79	0.49	1.96	0.50	2.67	0.52	+	2.42	0.44	1.90	0.48	+
50	Calf skinfold (cm)	1.09	0.24	1.35	0.37	1.65	0.36	+	1.45	0.25	1.22	0.30	+

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Table 4

Linear models for young female volleyballers' efficiency of perfomance of different technical elements predicted by anthropometric measurements.

No	Predicted variable	*Regression equations and coefficients of determination*
		Anthropometric basic measurements
1	Efficiency of serve	$-0.99-0.02X_2-0.03X_3+0.06X_5+0.09X_{36}$ $R^2=0.32$
2	Efficiency of reception	$3.36+0.03X_2-0.09X_5+0.08X_4+0.55X_{24}-0.02X_{27}-0.13X_{39}$ $R^2=0.50$
3	Efficiency of block	$-3.48+0.07X_2+0.06X_5-0.16X_{32}$ $R^2=0.80$
4	Efficiency of feint	$-3.22-0.05X_2-0.06X_3+0.11X_5-0.07X_{29}+0.03X_{31}+0.19X_{36}$ $R^2=0.83$
5	Efficiency of attack	$6.44+0.05X_2-0.03X_3-0.04X_{28}+0.12X_{35}-0.12X_{37}$ $R^2=0.71$

Exploratory variables:

X_2 – Weight (kg)

X_3 – Height (cm)

X_4 – Suprasternal height (cm)

X_5 – Xiphoidal height (cm)

X_{24} – Wrist breadth (cm)

X_{27} – Upper chest circumference (cm)

X_{28} – Lower chest circumference (cm)

X_{29} – Waist circumference (cm)

X_{31} – Hip circumference (cm)

X_{32} – Upper thigh circumference (cm)

X_{35} – Lower leg circumference (cm)

X_{36} – Arm circumference (cm)

X_{37} – Arm circumference flexed and tensed (cm)

X_{39} – Wrist circumference (cm)

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Sex Differences in Pain Perception: A Biological Perspective

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The sense of pain is important in conveying information about the external environment and internal bodily function. Clinical and experimental data clearly demonstrates sex-based differences in behaviors, including the perception of pain. The source of these differences is likely intrinsically mediated, such as differences in brain structure and function and by gonadal hormones. Although it is possible that social-cultural influences may also impact sex differences in pain perception, the pre-clinical experimental data suggests that much of the differences are due to biology rather than environment.

Key Words: Analgesia; Brain function; Nociception; Sex differences.

Significant behavioral differences between men and women have been objectively documented. Despite findings that there are sex-based differences in central nervous system (CNS) related disorders (e.g. Riecher-Rossler and Hafner, 2000), treatment remains sex neutral. Chronic pain, or pain that persists for months or years following an injury or disease, is another CNS-based disorder that differentially affects males and females. The incidence of persistent pain will increase as the world's population ages, yet current treatments for this growing health problem are suboptimal. Understanding the sex-related differences in pain perception could ultimately lead to better treatment regimens for both men and women.

The Pain Response

An acute injury evokes a neuronal cascade that leads to characteristic behavioral responses which may be categorized as the "pain response". Following contact with a noxious stimulus, the "pain signal" travels from peripheral nerves to the spinal cord, where reflex pathways initiate immediate movement away from the source of stimulation. Pain signals then activate brainstem regions that either dampen or boost the initial pain

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signal, depending on the situation. Higher regions of the brain, such as those involved in emotion and cognition, also participate in the pain response. Thus, the afflicted individual will initiate a series of actions beyond simple spinal reflexes, such as verbal and nonverbal responses and seeking aid. The situation may also be stored for later recall. Thus, the pain response involves behaviors beyond the initial acute response. Like other complex behaviors, pain may be modulated by external or environmental factors (e.g. Mother's soothing voice). Since males and females are physiologically different, sex must influence the pain response, as is the case for other kinds of behaviors.

Clinical Differences: Sugar and Spice...

Human sex-based behavioral differences have been characterized, from infancy through adulthood (e.g. Moir and Jessel (1991)). These differences were taken for granted prior to the advent of women's "liberation," after which sex differences were trivialized. Behavioral differences are apparent even prior to any significant environmental influence such as "gender expectations". For example, male infants are more active and exploratory, whereas female infants tend to be more restrained. Girls learn to speak and read sooner than boys but boys have greater visual-spatial skills than girls. Boys and girls chose and enjoy dissimilar kinds of television programs and books. Adult males and females may choose similar careers, but motivations differ according to sex. The prevalence of abnormal behaviors also differs according to sex (Earls, 1987). Despite modern social engineering efforts by egalitarians, male and female behavioral differences persist. The different behaviors between male and female tend to be complementary rather than divisive, a harmonious society utilizing the unique traits of each sex for its survival.

An important element that underlies the sex differences in behavior may be ascribed to how men and women perceive their world. Male and female sensory organs appear to function differently, as Velle (1987) has summarized. Infant and adult females are more sensitive to visual, olfactory and gustatory stimuli than males. Males and females also differ in sensitivity to somatic non-painful stimuli. In general, female neonates are more sensitive to tactile stimuli (two-point discrimination) than

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males and this difference persists into adulthood. Females are also more sensitive to a low intensity electric shock than males. Changes in sensory sensitivity have been reported that tracks with the female's menstrual cycle, suggesting an interaction between female hormones and sensory systems. Sex differences in brain activity (evaluated by functional magnetic resonance imaging (fMRI) (e.g. Levin et al., 1998)), combined with psychophysical data, support the hypothesis that males and females differ in normal sensory perception.

Sex differences in sensitivity to intense or noxious somatic stimulation have been reported in both infants and adults. Infants have been extensively utilized as subjects in examining reflexive behaviors, including pain. On one hand, the impact of extrinsic cues on infant behavior is minimal and infants undergo "pain testing" in the form of a brief medical procedure such as an injection. Also, any potential hormonal and behavioral interaction is minimized in infants. On the other hand, assessing the degree of pain sensation poses a challenge, since infants are unable to elaborate if a noxious stimulus is either just detectable or unbearable. A typical method of measuring pain in infants is to score facial expressions and duration and intensity of crying. A study in 1-5 days-old infants reported that females displayed more pain-related facial expressions following capillary puncture than males (Guinsburg et al., 2000). However, Romus et al. (2000) did not observe sex differences in older (2 month old) infants following a similar procedure (inoculation). (Interestingly, Romus et al. did report a greater pain responses of "Chinese" compared to "non-Chinese" infants, supporting a racial difference in pain perception (Hama, 2001). Fuller (2002) observed that female infants cry differently than male infants (higher pitch and more "broadcast" crying). Fuller suggested that the data did not necessarily suggest differences in pain sensitivity, only differences in the response to acute pain. To better capture absolute differences in infant pain perception, future studies should utilize quantitative physiological measurements. For example, Owens and Todt (1984) found a positive correlation between a physiological response (heart rate) and an visible behavior (crying). Although an overall correlation coefficient was not calculated, a range of 0.5-0.9 was observed from two male and two female infants. The authors asserted that there

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were no sex differences in pain behaviors, but data analysis supporting this assertion were not presented. Studies in infants are far from complete, but the data thus far suggest an early development of sex differences in pain-related behaviors.

Sex differences in pain perception in older children (3-15 year-old) have been reported. An obvious advantage older children have over infants is that they are able provide qualitative information on pain or "painfulness". For example, girls tend to be more vocal and rate their pain as more unpleasant than boys do (Fearon et al., 1996; Goodenough et al., 1999). The authors of these studies contend that the sex-related pain difference is due to social conditioning. Although young children begin to learn the "cultural norms" at school and at home, behavioral differences between girls and boys persist throughout childhood. As with infants, quantitative physiological parameters or non-subjective measures have rarely been included in pain studies of children.

The majority of experimental pain studies in humans have involved adults because of obvious practical as well as ethical considerations. Two subjective end-points have been used to measure pain in adult subjects, which are likely to be sub-served by distinct mechanisms, is pain threshold and pain tolerance. Threshold is defined as the first perception of a stimulus as painful. To determine tolerance, subjects are asked to endure the highest pain possible. Since pain evokes an emotional response, subjects are sometimes asked to ascribe a feeling associated with the pain. Women rate a given stimulus as more painful and unpleasant compared to men and tend to have lower pain thresholds and tolerance (Berkley, 1997). The difference in pain perception can be observed across various stimuli, such as heat, pressure, cold and electrical shock (Edwards et al., 1999). Riley et al. (1998) found that sex accounts for a significant percentage (40-50%) of the variance for pain threshold and pain tolerance. The remainder of the variance maybe due to sex specific learned behaviors (Wise et al., 2002). For example, men are taught not to disclose their pain and to remedy themselves, whereas women are told it is acceptable to cry out in pain and seek assistance. However, the sex-based differences is not particular to one "culture," suggesting that biology, rather than particular culturally specific cues, has a significant influence on pain perception (Faucett et

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al., 1994; Woodrow et al., 1972).

Sex differences are observed in the clinical pain states. Females are more likely than men to suffer from debilitating pain syndromes such as migraine, fibromyalgia, irritable bowel syndrome, temporomandibular disorder (TMD) and complex regional pain syndrome (references in Fillingim, 2000; Vatine et al., 1998). In these syndromes, patients respond to stimuli that are innocuous in healthy people as if they are now extremely painful and have an underlying cramping or burning pain. In addition, chronic pain patients also present some level of affective disorder. It is difficult to ascribe a cause to chronic pain since obvious pathology is rarely observed. In addition, since patients present with mood disorders, physicians mistakenly diagnose the pain problem as psychiatric. The pre-clinical and clinical evidence suggests that an abnormality in peripheral or central processing of somato-sensory information forms the basis of these syndromes. Furthermore, the alteration in processing is more pronounced in women than in men, since the severity is more pronounced in women. For example, the higher incidence of TMD in women compared to men may be due to differences in peripheral sensory nerve function. To test the sensitivity of facial sensory nerves, Cairns et al. (2001) injected the excitatory amino acid transmitter glutamate into the masseter muscle. Following injection of glutamate, women reported higher pain intensity over a larger area of the face than men. Also, the pain following glutamate injection was of longer duration in women than in men. These results demonstrate different physiological responses to the same stimulus in both males and females, which is greatly enhanced in women. One possible source of these differences is female gonadal hormones.

The pain sensitivity in women, in either the normal or pathological state, changes with the menstrual cycle. Estrogen appears to have a key role in enhancing certain types of acute pain perception (Tsen et al., 2001). In healthy females, somatic sensitivity to painful stimuli and visceral sensitivity (organ sensitivity that is referred to the skin) is increased (hypersensitivity) during the ovulatory phase (Bajaj et al., 2001). Conversely, women with chronic back pain rated their pain as being worse during the menstrual phase (Hellstrom and Anderberg, 2003). Although female hormones modulate pain

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perception, it appears that an enhancement or decrease of pain depends on the type of pain. It appears that modulating hormone levels or blocking the hormone effect with an antagonist may be a useful analgesic therapy for females.

Because all behaviors originate from the brain, it is possible that sex differences in behavior are due to discrete sex differences in brain anatomy and function. Because of the multidimensional aspect of pain, differences may be found beyond brain regions that are directly involved in pain processing.

Male Brains and Female Brains

Sex differences in overall brain anatomy have been noted based on analysis of post-mortem material and *in vivo* using magnetic resonance imaging. For example, the brain volume of males is greater than that of females, after controlling for IQ, age and body length and the differences is not limited to a single race (Caviness et al., 1996; Reiss et al., 1996; Nopoulos et al., 2000; Rushton, 1995; Skullerud, 1985). Differences in particular brain areas known to be associated with various behaviors have described. Until recently, however, the functional consequence of these anatomical differences was difficult to assess.

Advanced *in vivo* brain imaging techniques have not only confirmed previous assumptions on structure-function relationships but also have uncovered sex differences in brain function. The use of *in vivo* imaging also points out areas of the brain not previously identified in certain behaviors. For example, it has been generalized that the left cerebral cortex controls language use in humans. In males, this is the case. However, in females, language use engages large areas of both the left and right cerebral cortex. When performing the same mental tasks, females show higher global cerebral blood flow compared to males (Esposito et al., 1996; Ragland et al., 2000). Thus, *in vivo* brain imaging is a powerful tool that evaluates the role of various brain regions in intact and conscious humans and animals.

Painful stimulation of the skin or viscera also activates various brain areas which can be visualized using fMRI (Kern et al., 2001; Chen et al., 2002). Cerebral blood flow in various brain regions (e.g. pre-frontal cortex, thalamus) is more

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elevated in females compared to males following acute noxious stimulation (Paulson et al., 1998). The increased activation also parallels the higher pain intensity reported by females in this and other studies. Thus, differences in brain processing are more likely to be responsible for differences in pain perception rather than secondary sex characteristics (e.g. skin thickness, weight) or differences in learning.

Other evidence that suggests differences in brain function are differences in neurotransmitters, the chemicals that neurons use to communicate with each other. Loss or excessive neurotransmitters are found in movement disorders and are believed to underlie mental disorders (e.g. Kaasinen et al., 2001 and references therein). There are sex-related differences in the serotonergic and dopaminergic systems, both neurotransmitter systems having a role in pain modulation as well as regulation of mood (Chugani et al., 1998; Meltzer et al., 2001; Staley et al., 2001). The opiate neurotransmitter system also has a key role in modulating pain perception. Complex differences in opiate receptor function have been observed in males and females (Zubieta et al., 2002). In this study, the stimulus intensity (noxious stimulation of an part of the face) was adjusted to give similar responses from both sexes. Given the same level of pain, however, different brain regions that contained opiate receptors were either activated or deactivated, which were sex-dependent. These findings may extend to the other neurotransmitter systems involved in pain modulation (e.g. GABA, glutamate), which, in turn, modulate other behaviors. Thus, measuring the level of a particular neurotransmitter may be a useful diagnostic tool. However, more information needs to be gathered concerning the role of these transmitters in behaviors such as pain. Practical limitations prevent the use of humans in detailing the neurochemistry and pharmacology of brain function.

Non-human Experimental Data

Experiments involving the use of animals have greatly expanded our understanding of the neural mechanism of pain, particularly in examining the neurochemical processes within a particular brain region that may be important in the chronic pain state and in evaluating experimental therapeutics. Under laboratory conditions, the environment of the animals is strictly

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controlled, so that differences observed between males and females may be attributed to intrinsic, rather than environmental, factors. The hormone status of the rats may be closely monitored and if needed, endogenous and exogenous levels of gonadal hormones may be carefully altered. In some labs, males and females between sub-strains have been compared and contrasted to evaluate any genotypic influences on the sex differences in pain perception (e.g. Kest et. al., 1999).

Basal differences in the synthesis and release of neurotransmitters and neuropeptides have been reported between male and female rats (Carlsson et al., 1985; De Vries, 1990; Becker, 1999; Searles et al., 2000). Currently, it is not known how these differing levels of neurotransmitters affects basal pain sensitivity. (The differences in transmitter levels may be the result of developmental processes that particular to rodents, so caution must be used when extrapolating these findings to humans.) If the differences in transmitters turn out to be consistent with humans, then the rodent may be a useful human surrogate. It will then be possible to experimentally probe with selective drugs in clarifying the role of these transmitter systems in male and female pain perception.

In the rat, female gonadal hormones appear to either enhance or diminish pain sensitivity, depending on the behavioral test. For example, in the tail-flick test, exogenous estrogen and progesterone increased the latency to respond (analgesia) in ovariectomzied (ovx) rats, whereas in the hot plate test, estrogen reduced the latency to respond (hypersensitivity). Although both assays measures the responsiveness of the rat to a noxious heat stimulus, the tail-flick test evaluates, to a large extent, a spinally-mediated reflex (tail withdrawal from a hot light) whereas the hot plate test evaluates a response that integrates both spinal and supraspinal pain regions (e.g. hind paw licking and jumping). Thus, depending on the behavioral assay, different components of the CNS will be affected by drugs as well as hormones. In the case of estrogen in the tail-flick test, animal results suggest that the analgesic effect of female gonadal hormones are spinally mediated, whereas in the hotplate test, hypersensitivity to these hormones is most likely mediated through higher brain regions (Gordon and Soliman, 1996). Parallels to rat hot plate test results and findings

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in humans (e.g. cold hypersensitivity following estrogen treatment, Tsen et al., 2001) suggest that female hormones involve higher brain pain-related regions. Conversely, data suggests these hormones reduce pain (e.g. Hellstrom and Anderberg, 2003) maybe be due to suppression of pain at the spinal level. Micro-injection of hormones into discrete brain regions and spinal cord in rats may be help to confirm these hypotheses.

As mentioned earlier, the incidence of chronic pains are higher in women than men, including chronic pain resulting from a peripheral injury. Rat models of chronic pain have been developed that mimic clinical symptoms (e.g. hypersensitivity to an innocuous stimulus). The severity of the symptoms following the procedure in female rats is greater compared to male rats (Coyle et al., 1995; DeLeo and Rutkowski, 2000). To determine a role for ovarian hormones in the development of neuropathic pain, ovariectomies were performed prior to peripheral nerve injury in the rats. Intact nerve-injured rats displayed hypersensitivity to an innocuous mechanical stimulation. In contrast, ovx nerve-injured rats displayed less hypersensitivity, responses being similar to sham-injured female rats (Coyle et al., 1996). Thus, it appears that ovarian hormones may increase the severity of pain following nerve injury in females, as it does in some types of chronic pain in human females. A different study, however, raises other possibilities of hormonal influences on chronic pain. Using a different nerve injury model (and different rat sub-strain), Tall et al. (2001) did not find a difference in responsiveness in either intact or ovx female rats. However, the hypersensitivity in both intact and ovx female nerve-injured rats persisted long after the attenuation of hypersensitivity in male nerve-injured rats. In this study, it appears that androgens (e.g. testosterone) were "protective" in male rats, reducing the behavioral effect of nerve injury. Future studies could evaluate the effects of hormone modulators in gondally intact rats. This would help not only to further elucidate the role of hormones in either the enhancement or suppression of chronic pain but also to test compounds that may be useful analgesics.

Response to Analgesics

A different approach to evaluate sex differences in pain

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perception is to evaluate the effect of the same drug in males and females. In fact, there are sex differences in drug effects, including efficacy, potency and duration of effect. In particular, men and women respond differently to the two dominant classes of analgesics, the opiates and non-steroidal anti-inflammatory drugs (Flores and Mogil, 2001). Other analgesics have also shown to have differing efficacy as well (e.g. references within Chiari et al., 1999). Studies in rodents have confirmed human sex differences in responsiveness to analgesics. However, since the drugs were systemically administered, it is possible that some of the differences in drug effects may be due to pharmacokinetic differences rather than pharmacodynamics differences. To eliminate the issue of metabolism following systemic administration, drugs have been injected directly into the CNS, and the sex-based differences in responsiveness persist (Chiari et al., 1999; Kest et al., 1999). In rats, the analgesic effect of spinally infused neostigmine was found to be mediated through one set of receptors in males and a different set of receptors in female rats. This study suggests that a mechanistic difference underlies the analgesic effect of neostigmine in female rats vs. male rats. Since different receptors are involved, the results also implies that the gene which mediates neostigmine analgesia found in females differs from that of males. A similar finding in mice, that a particular drug is more effective in females than in males, has led to the isolation of such a candidate gene by quantitative trait loci mapping. The presence of the gene in humans predicted the efficacy of the drug in humans (Mogil et al., 2003). This study demonstrates not only a potential strategy for finding novel pain-related targets but the translation of a behavioral mechanism from animals to humans.

Consequences for Treatment

In the past, a one-size-fits-all approach to medical treatment has been developed, irrespective of genetic variability. Pre-clinical evidence accumulated thus far indicates that sex and as well as genotype influences CNS-related disorders such as chronic pain. The clinical data point out that patients do not experience the same level of efficacy given a particular drug. The importance of the these biological factors have filtered into clinical studies that receive National Institutes of Health

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funding, which must include "representative" numbers of subjects of both sex as well as race (PHS 398). In multi-racial United States, inclusion of the various racial groups as well as females in clinical studies makes sense if the goal is to understand patho-physiological mechanisms in a broad context. In order for analgesics to have maximum efficacy, therapy should be designed towards the individual or sub-groups within a population.

The chronic pain state includes multiple levels of CNS processing, from sensation through emotion. Most analgesic therapies focus on alleviating the pain, in the belief that once the pain goes, the other symptoms will be attenuated. Since evidence suggests that women attach a significant affective component to pain, a treatment that ameliorates the stress as well as pain may prove to be more efficacious than one that only treats the pain. Thus, future therapeutics will likely be based on novel or distinct targets, for example, found exclusively in either males or females. Conversely, drugs that are meant to be useful for everyone will be based on common mechanisms found within the population. The genetic basis of pain has yet to be fully uncovered, but a better understanding of its details promises to deliver a diverse armamentarium of drugs that will result in better patient care.

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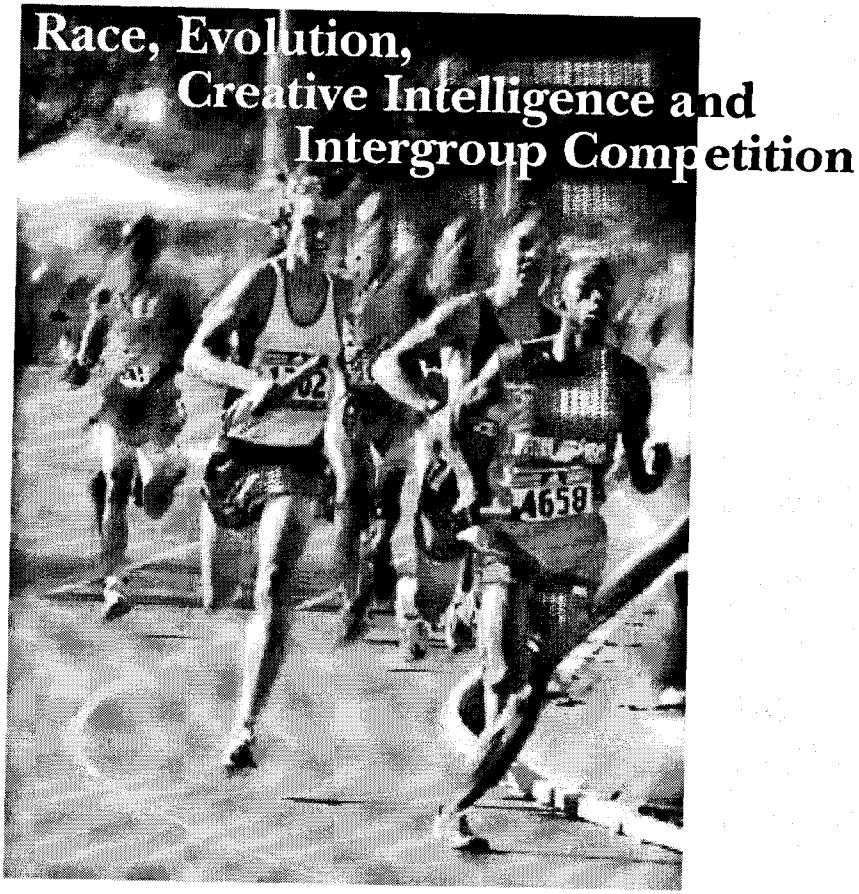

Edited by Alan McGregor, five distinguished academics present arguments which support the view that human evolutionary advance resulted from competition between rival populations as well as from competition to reproduce from within breeding pools. Until recent times, it is argued, the more intelligent and competent populations competed against the less-evolved and tended to replace them, thus leading to a rise in the quality of future generations.

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The IQ of Gypsies in Central Europe

Petr Bakalar[1]
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The author provides a review of research on the IQ of Gypsies in the Czech and Slovak Republics. He finds that their average IQ is significantly lower than that of the Czech and Slovak populations and tries to identify the evolutionary roots of the difference.

Key Words: Gypsies; Intelligence Quotient; Czech and Slovak Republics; r-K strategies; Orphanages; Dysgenics

This paper presents data bearing on the theoretical work of Bereczkei (1993) on Hungarian Gypsies in which he proposes that their lifeways can be understood in terms of r-K population differences and that the Gypsies follow an r-strategy. Berecezkei cites evidence that the Gypsy's average levels of education and job qualifications are very low, although he does not present any evidence on their intellectual ability. Similar findings of low educational achievement and occupational achievement have been reported for Gypsies in the Czech republic (RCR, 1999). The leading exponent on human group differences in r-K strategies is Rushton (1997) who proposes that r-strategists have lower brain size, and lower IQs and large numbers of children, as compared with K-strategists.

Several studies in central Europe have shown that Gypsies tend to score lower on IQ tests. This has frequently been explained as the result of (a) the poor environmental conditions in which Gypsy families live and (b) language difficulties, because a number of Gypsies speak their own language and not that of the majority population. It is probable that the environment in which Gypsies typically live does not foster the development of intellectual abilities and social mobility. However, the pervasive social failure of Gypsies in all studied societies raises the question of whether their intellectual deficit is due to biological/genetic causes as well as environmental differences. In this paper the psychology and lifestyle of Gypsies are examined in the framework of r-K strategies, and consideration is given as to how far the recorded intellectual

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differences can be explained in terms of r-K strategies.

School Achievements and IQ

The school achievement of Gypsy children living in the Czech and Slovak Republics is very low, and it has been estimated that 62% Gypsy children attend special schools in comparison to the 4.2% of the general population. Gypsy representation in higher education is negligible (Anonymous, 1999, p. 23). In 1991 approximately 1% of the Gypsy population completed secondary school as compared with 23% of the non-gypsy population; 0.3% of Gypsies have university degrees as compared with 7.2% of the non-Gypsy population. It is estimated that more that almost 80% of Gypsy adults have only basic education (the number includes unfinished basic education as well) (Kalibova, 1996).

It seems that there is a difference in IQ between the Gypsy and non-Gypsy population that cannot be fully explained by environmental factors, although the degree to which the difference is due to genetic as distinct from environmental factors is from the methodological point very difficult to measure. The main methodological obstacle is the absence of any matching control group of non-Gypsy subjects. The percentage of Gypsy children in groups which tend to score low on IQ tests (e.g. children from orphanages, delinquents) is disproportionately high.

The results of research in the Czech and Slovak Republics on the mean IQs of Gypsy children is summarized in Table 1. It will be seen that Gypsy children score lower in every group compared with non-Gypsy children.

Head Circumference and IQ

Studies have established a weak but statistically significant correlation of the order of .15 to .25 between IQ and head size (e.g. van Valen, 1974; Rushton, 1997, pp. 36-41). It has been shown that the brain size measured by magnetic resonance imaging correlates with IQ at r = .40 and that head circumference is related to brain weight with correlations between 0.80 and 0.98 (Rushton, 1997, p. 41). Lynn (1990b) confirmed the correlation in three studies of 9- and 10-year-old students measuring head circumference by tape and intelligence by standardized tests. Before correction for attenuation due to measurement error, the correlations were

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between 0.18 and 0.26, after correction they ranged from 0.21-0.30.

Bernasovky and Bernasovka (1999, pp. 57-59) examined 855 Gypsy and non-Gypsy children aged 1-5 years and found out that in all age groups the Gypsy children possess smaller head circumference than non-Gypsies. The differences are statistically significant with the exception of boys aged 1 year.

Jensen and Sinha (1993) estimate that the correlation between intelligence and brain size, as independent of stature, or body size is 0.3.

Fertility

A central component of r-K strategies consists of the numbers and treatment of children. The r-strategy is to have large numbers of children and provide little care for them, while the K-strategy is to have few children and provide a great deal of care for them. Gypsies conform to r strategies in this regard. According to Kalibova (2001) the average number of children for a Gypsy woman is 4.9 in comparison to the 2.1 for women from the general population.

However, relatively large numbers of Gypsies babies are left in orphanages. It is estimated that Gypsies comprise around 50% of the children in orphanages of the countries under study, although they currently comprise only 3% of the population (RCR, 1999). However, it must be remembered that non-Gypsy children tend to be more quickly adopted than Gypsy children (Antalova, 1980). This fact disproportionately negatively influences the number, and possibly also the quality, of the non-Gypsy children in orphanages. Furthermore, Non-Gypsy parents who abandon their children tend to represent the r- end of the Czech population, probably close to the 95-100th percentile, but the high number of Gypsy children in orphanages suggests that Gypsy parents who abandon their children may very well range from the 70th to 100th percentile of their population. Precise data are not available.

Evolutionary Hypotheses that might Contribute to the Lower IQ of Gypsies

I propose four theories which might serve to explain any genetic forces responsible for the lower IQ of Gypsies. Although Gypsies do not comprise genetically homogenous groups (Gresham et al., 2001), the following hypotheses could apply to

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most known Gypsy groups. Each of the suggested reasons may contribute to the final result although it is unclear how much weight should be attributed to genetic factors or indeed to any one of these hypotheses.

1. Climatic Hypothesis

The original homeland of Gypsies is generally agreed to have been India (Fraser, 1998). According to Lynn and Vanhanen (2002) populations from India have an overall mean IQ of 81 as compared with a mean of 100 for populations in northwest, west and central Europe. However, India is home to a wide variety of very different and largely non-intermarrying ethnic groups, with a marked range of mental attributes, some with very high IQs, and it may be that the Gypsies originated in one of the lower achieving elements of that very varied population. Although some authors (e.g. Kenrick, 1998, Hancock, 1987) have suggested (based on a linguistic analysis) that the Gypsies originated in north-west India, recent genetic work by Bernasovky & Bernasovska (1999, p.142) concludes that the presence of the Fy*Q0 allele in high frequency among Gypsies provides evidence that the origin of this population in the Indian subcontinent is to be sought in hot areas where malaria is present. This seems to exclude Northern India as the place of origin of the Gypsies, and implies that the Gypsies may have originated in an ancient aboriginal population, of which the sub-continent has many residues.

2. Pariah-Slave Hypothesis

This would suggest that the Gypsies belonged to one of the lowest castes in India (Fraser, 1998). It is highly probable that the Indian castes, to the extent that they represent different ethnic groups, differ genetically in the characteristics that influence social mobility (e.g. intelligence and conscientiousness). Even if that was not the original status of the Gypsy population, their condition has not allowed them to create a successful intellectual elite. After arrival in Europe, as Hancock (1987) has shown, more than a half of the Gypsy population in Europe was enslaved, mostly in the Balkan region. Eysenck (1971, p. 46-47) has proposed that slavery has a dysgenic effect on reproductive trends amongst enslaved populations. He suggests that slave traders needed slaves whom they could easily manipulate, and those who were not "dull and

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submissive" were killed, which would tend to select against intelligence. The same model could hold for Gypsies in Europe. On the other hand, enslavement often led to coercive sexual relations between Gypsy females and their masters (Hancock, 1987) and these sexual practices could have changed the Gypsy genetic pool in a different direction.

3. Negative Assimilation Hypothesis

Rican (1998) has argued that there has been a trend for better-adapted Gypsies to assimilate into non-Gypsy populations. The extent of this assimilation is unknown, but to the extent that it may have taken place it would have served to reduce the IQ of the surviving Gypsy population.

4. Inbreeding Depression

Consanguineous marriages are much more common in the Gypsy population than in the majority society (Ferak et al., 1987). This could result in inbreeding depression that reduced intellectual ability (Jensen, 1998, pp. 189-197).

Countervailing Selective Forces

There is, however, another force that may have enhanced the intelligence of the Gypsy population during the course of their history in Europe, namely the selection pressure exerted by the non-Gypsy population. Gypsies were often persecuted and sometimes many killed (Fraser, 1998). It is reasonable to speculate that higher IQ was an advantage for survival. Lynn (1990), following Eysenck, has proposed this model for Jews and it could perhaps have worked in same way for Gypsies. It is impossible to evaluate the effect of this selection pressure but it was probably too weak to outweigh the more probable dysgenic forces influencing reproductive trends amongst Gypsy populations.

Discussion

It has been shown that the central European Gypsies are r-strategists in respect of their lower IQ, smaller brain size, high birthrate, and high propensity to abandon their children in orphanages. Existing research on Gypsy IQ supports this hypothesis. It is proposed that, to the extent that low IQ amongst Gypsy populations may be at least partially attributable to genetics factors, the evolutionary history of Gypsies appears to reflect dysgenic trends.

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Table 1:
Results of IQ tests for Gypsy population

Sample	*Age*	*Number of Gypsies / non-Gypsies*	*Test*	*Gypsy IQ*	*Non-Gypsy IQ*	*Source*
Delinquents	15-18	42 / 258	Raven	71	91	Balastik, 1970
Orphanages	12-15	?	?	75	85	Olejar, 1972
Orphanages	10-12	?	WISC	73, 4	87, 6	Andreanska, 1973
Normal schools	6-7	33	Terman-Merrill	78, 4	—	Kvassay, 1975
Orphanages	7	36	Terman-Merrill	82, 3	—	Kvassay, 1975
Special schools	11-15	152 / 323	Various non-verbal tests	73, 6	80, 8	Zakova, 76
Orphanages	3-6	41 / 34	Terman-Merrill	72, 9	84, 8	Antalova, 1980
Normal schools	6-7	178	WISC (verbal part)	71, 9	—	Ferjencik, 1997
Normal schools	6-7	178	Raven	80, 3	—	Ferjencik, 1997
Various (representative sample of the CR)	6 – 16;11	87 / 1357	WISC-III	79, 6	101, 4	Dan, 2002

Comprehensive research on this subject was recently done by Dan (2002). Dan tested using Czech version of WISC-III a representative sample of 1357 non-Gypsy children and 89 Gypsy children aged 6 – 16.11. The mean difference was 21.8 IQ points ($p < 000$).

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Table 2:
Results of Gypsy children

Variable	*Mean*	*SD*	*median*	*No. of examinees*
IQ_VERB	81,87	10,83	79	89
IQ_PERF	80,06	10,94	79	89
IQ_	79,58	10,16	79	89

Table 3:
Results of non-Gypsy children

Variable	*Mean*	*SD*	*median*	*No. of examinees*
IQ_VERB	101,28	14,35	101	1363
IQ_PERF	101,41	14,27	102	1359
IQ_	101,41	14,28	101	1357

Table 4:
Wilcoxon´s test (two-tailed)

Variable	*Test's statistics*	*p – value*
IQ_VERB	-11,62	0,000
IQ_PERF	-12,30	0,000
IQ_CELK	-12,64	0,000

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Society and Genes: On the Subject of IQ Population Genetics

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The Great War and subsequent Depression swept away the mentality of Empire and class privilege, leaving a vacuum which was filled by an intellectual climate of extremist egalitarianism. Western society of the twentieth century came to be dominated by a new, unified ideology. Freudianism, Marxism, B. F. Skinner's Behaviorism, Franz Boaz's cultural history, and Margaret Mead's anthropology all stressed the marvelous "plasticity" and even "programmability" of *Homo sapiens.* The twenty-first century will witness a retaking of ground by hereditarian thinking and a reestablishment of balance in the nature/nurture debate.

Key Words: Innate ability; IQ; Crime; Welfare; Differential fertility; Selective mating.

Politics: Manipulation Masked as Democracy

I am myself indifferent honest, but yet I could accuse me
of such things that it were better my mother had not borne me.

Hamlet

The genetic bases of social and political structures constitute a topic which even the bolder sociologists and political scientists have been leery of raising for two-thirds of a century. It is a taboo which grossly distorts our understanding of ourselves.

There probably has never existed a society with a totally rigid structure in which ability played no role. Under the Caesars, the Pharaohs, the Ottomans, the Tsars, and probably even the Mayan princes, the gifted slave could on occasion demonstrate his ability and achieve high rank. In modern society, however, where such mobility has been immensely increased, universal education combined with assortative mating is creating greater and greater genetic stratification into classes which are then overlaid with stratifications of wealth and power.

In a dictatorship, government is more inclined to determine directly the various functions performed by its citizens, whereas

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in a democracy the citizenry usually enjoys greater freedom of selection. But even in the most permissive democracy, if the individual does not possess independent means and does not want to starve to death, he must perform *some* function to which society assigns a value, or become dependent on resources transferred from others who have been able to support themselves. This is not stated as a value judgment; it is simply a fact of life. The distinction between democracy and dictatorship has to do primarily with how the authorities get the same tasks accomplished, and thus make it possible to maintain a functioning social mechanism and allow those in power to remain in power, whatever their personal goals.

The Skinner box of capitalism has proven to be far more efficient than the Gulag in raising production/consumption. Evidently we have much more in common with cattle than with cats, for we are herded with amazing ease. True democracy is not possible if the people fail to understand the issues. The modern "developed" state actually replaces democracy with manipulation – something that would be much more difficult in a eugenically developed society, where the populace would easily see through government by ruse. Dictatorships are difficult to maintain, since a leader who refuses to take account of the disposition of forces in that society will eventually be overthrown. Democracies, on the other hand, possess considerably greater flexibility through manipulation of the popular will.

As for political dialogue, it takes place on three levels: a) sham issues intended to manipulate the masses, b) the true (usually clandestine) goals of the ruling elite, and c) long-term species survival issues, which are generally more ignored than suppressed, since the beneficiaries (those yet to be born) do not constitute a present-day constituency.

In 1933, gazing around him in dismay at the Great Depression and peering back at the "holy war fought to make the world safe for democracy," the former civil servant John McConaughy in *Who Rules America?* defined his country's "invisible government" as "the political control for selfish, if not sinister, economic purposes – by individual men, or groups or organizations, who are careful to evade the responsibility which should always accompany power. They operate behind a mask of

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puppets in politics and business."[2] Exactly a half century later the sociologist G. William Domhoff, whose political views were far to the left of McConaughy's, arrived at similar conclusions in his *Who Rules America Now?* describing a cohesive ruling class that shapes the social and political climate and plays a dominant role in the economy and the government with the primary goal of promoting its own self-interest.

No human interaction is more fiercely competitive than is politics. What is the true nature of that process? To take but one example, Washington, D.C. is home to a society of "networked," monied, politically sophisticated individuals, while 37% of that same city's residents read at a third-grade level or lower.[3] The situation is comparable to a champion sprinter competing against a 90-year-old in a wheelchair. Not surprisingly, the "winners" in this race favor the process that allows them to achieve and maintain their spoils system, and to do so without any sense of guilt.

One percent of American citizens now own 40% of the nation's wealth.[4] In elections vested interests make electoral campaign contributions, parts of which are used for polling the voters to learn what they want to hear, while the lion's share is invested in advertising that is as based as little on logic as an ad for a soft drink. The resulting advertising presents a combination of what the pollsters discover and what the propaganda specialists consider the populace will accept. To make matters worse, literally a handful of people now control most of the media, and there is no talk of applying antitrust legislation to stop even further amalgamations. And the system functions incredibly smoothly – exactly as intended. When the candidate is eventually elected, having outspent his opponent, he then goes on to do the bidding of those who paid the bill. Should the electoral results be in doubt, the candidate has merely to wrap himself in the flag while denouncing his opponents. The result is an unbridgeable chasm of understanding between elites and the broad masses. A serious university press published book may have a print run of a few hundred copies, while a television show of only middling

[2] McConaughy, 1933, 1, 7.

[3] Timberg, 2003.

[4] Traub, 2002.

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popularity will measure its viewership in the tens of millions, and Hollywood aspires to hundreds of millions all over the world. Intellectuals are supposedly free to express their opinions (as least as long as they do not threaten the powers that be), but informed opinion is irrelevant to the political process. In rare moments of honesty proponents of such democracy justify the existing system as preferable to violence.

This situation has been made possible by the inability of the general populace to comprehend the true nature of the issues. Indeed, how can any rational observer view any human society as a collective of informed individuals making rational decisions? In a 2000 Gallup poll 34% of those questioned were unable to name the probable presidential candidates. For persons having a high school education or less and earning less than $20,000 annually, this particular quotient of ignorance rose to 55%.[5] According to a survey done by the National Assessment of Education Progress, 56% of those tested could not correctly subtract 55 and 37 from 100; 18% could not multiply 43 x 67; 24% could not convert .35 to 35%; and 28% were unable to express "three hundred fifty-six thousand and ninety-seven" as "356,097." [6] In addition, 24% of adult Americans were unaware that the United States had fought the Revolutionary War with Great Britain, and 21% had no idea that the Earth revolves around the sun.[7] According to the Northeast Midwest Institute, a nonprofit and education research group, 60 million adult Americans cannot read the front page of a newspaper.[8]

As for art, philosophy, serious music and literature, and so on – that intellectual thought and creativity which should lend greater meaning to our lives than those of other animals that love, hate and dream much as we do – such matters are a subject of disinterest for the overwhelming majority of people. Go to the museums and you will see how the legacy of the ages has been systematically defaced by the man in the street.

In selecting out individuals of ability, modern society now has stripped the broad masses of society of the brilliant artisans and poets who formerly created and maintained national

[5] Gallup, March 22, 2000.

[6] National Assessment of Education Progress.

[7] Gallup, July 6, 1999.

[8] Rajeswary, 1985.

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cultures.[9] A visit to the magazine section of the local supermarket or a flip through the hundreds of channels of cultural garbage being dumped into the air over radio and television is sufficient to give the lie to egalitarian unwillingness to perceive reality and its callous lack of empathy for the tragedy of the intellectually disadvantaged.

Welfare and Fertility

See yon blithe child that dances in our sight.

Sara Coleridge (1802-1850)

Is the goal of the so-called welfare state fundamentally dysgenic in nature? In 1936, the famous biologist Julian Huxley laid out a hard-hearted version of the hereditarian view in his Galton lecture, delivered before the Eugenics Society.

> The lowest strata..., allegedly less well endowed genetically..., must not have too easy access to relief or hospital treatment lest the removal of the last check on natural selection should make it too easy for children to be produced or to survive; long unemployment should be a ground for sterilization, or at least relief should be contingent upon no further children being brought into the world.[10]

This opinion has justifiably been condemned, for we should remember that it was advanced at the depths of the Great Depression, and that many of these welfare cases were simply victims of failed financial policies, not bad genes. Reading such statements today we can readily understand why many recoil at the very mention of the word "eugenics." But the dysgenic threat is real, and hopefully, a rational society can see its way clear to provide the needed family-planning services and appropriate material incentives to effectively pursue eugenic goals in a more humane fashion.

Aid to Families with Dependent Children (AFDC) was established as part of the Social Security Act of 1935, just a year before Huxley's presentation. During the late 1960s and early 1970s, and again in the 1990s, the number of families receiving

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[9] G. Pomerantz, G. "Man Without an Adjective" in *Ethics* for a sensitive discussion.

[10] Bajema, 1976, 257.

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assistance increased sharply; 38% of recipients do not have a high school diploma.[11]

While the average welfare mother receives payments for only two years, never-married mothers who have babies in their teens average eight years and more of dependency.[12] These are the so-called chronic welfare cases. On average the mothers of illegitimate children score ten points lower in IQ than mothers of legitimate children.[13] These babies are alleged to make a incommensurate contribution to the future pool of rejected, abandoned, and battered children.[14]

The mechanism would appear to be economic. A young woman of average or greater ability can look forward to life's many opportunities and finds little temptation in a modest welfare payment, whereas a woman of low intelligence may rationally see AFDC as a ticket to independence and freedom from the hand-to-mouth realities of a minimum-wage job. It would seem logical that the higher the payments, the greater the temptation. Nonetheless, the link between economics and fertility has been challenged as still unproven. Demographer Daniel Vining, for example, has pointed out that lower welfare payments in southern states has not led to significantly reduced fertility patterns.[15]

We are faced here with a terrible dilemma. Society has an obligation to care for its weakest members, but the flip side of the coin is that in doing so we have significantly increased the fertility of low-IQ women (who generally tend to marry low-IQ men in what is known as "assortative mating"). And we pay them more for each child. Mothers on AFDC had an average of 2.6 children each; non-AFDC mothers averaged 2.1.[16] This is a major factor in American fertility patterns.

What to do? Deny poor women and their children financial assistance? Bribe the upper classes into more childbearing? Or throw up our hands in dismay and allow society to be genetically

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[11] Yax, 2000.

[12] Herrnstein/Murray, 1994, 197.

[13] David Lykken, quoted in Wright, 1997, 131. See also Herrnstein/Murray, 1994, 191-201.

[14] Guttmacher, 1964.

[15] Vining, 1983.

[16] Yax, 2000.

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dumbed-down? Indeed, given political realities, what can we do? Certainly, at the very least, it would behoove us to increase family planning services to the poor and fund from public moneys the same abortions that are easily accessible to the more prosperous classes.

It is a simple fact that current state policies – both domestic and foreign – already influence differential fertility patterns, even though the current political climate makes any discussion of this factor highly unpopular. Since future generations by definition represent a zero constituency, the public sphere is largely defined horizontally, whereas vertical or longitudinal effects are mostly relegated to the private domain and thus ignored, that is, remain unregulated. We just don't care.

Those who care for the welfare of posterity oppose this horizontal/vertical opposition. They feel that because the unborn constitute a vastly greater potential population than do the currently living, their rights should take precedence. Politics is, by definition, a struggle among the currently living, and what may well be a victory for some faction may well be a disaster for their children, just as the disasters of the parents may be to the children's good fortune.

We are now able to separate sex from procreation; either may occur without the other. It is now even possible for women to bypass the male's sperm.[17] Thus, the right to sexuality remains within the private sphere, but procreational rights, inasmuch as they define the very nature of future people, can be ignored by a people only to their own detriment.

Crime and IQ

Oh blood, which art my father's blood,
Circulating through these contaminated veins,
If thou, poured forth on the polluted earth,
Could wash away the crime...

Percy Bysshe Shelley (1792-1822)

Genes have been unquestionably shown to play a major role in not only intelligence, and mental and physical illnesses, but in virtually all behavior, including alchoholism, smoking, autism,

[17] Price, 2001.

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phobias, neuroses, insomnia, consumption of coffee (but not tea),[18] marriage and divorce, job satisfaction, and choice of hobbies. Curiously, while one study found no genetic role in singing ability,[19] another shows pitch perception to be highly heritable and estimates the heritability of tone deafness at 0.8 – about as high as it gets for genetically complex traits, rivaling features such as height.[20] Animal breeders and even pet owners have no doubts about differences between and within species, and we all know from everyday experience just how vastly people differ innately from each other. Genes evidently also play a role in crime.

In the mid-nineteenth century, criminal justice systems were still guided by the assumption of man's free will, and crime was viewed as a sin which had to be expiated. In the late 1850s, the French physician B. A. Morel established the field of criminal physical anthropology. Galton himself favored compulsory means to limit the breeding, not just of the insane, the feebleminded, or confirmed criminals, but also of paupers.[21] In 1876, just five years after the appearance of Darwin's *Descent of Man*, the Italian criminologist and physician Cesare Lombroso published *The Criminal Man*, which attempted to demonstrate the biological nature of violent criminality. Lombroso claimed to have established during autopsies certain physical stigmata characteristic of the born criminal, whom he saw as possessing a more primitive type of brain structure. If one accepts such biological determinism, punishment becomes meaningless.

Lombroso's theories are now generally rejected as invalid, but studies of the role of genes in crime have not been confined to the nineteenth century. A 1982 Swedish study found that the rate of criminality in adopted children was 2.9% when neither biological nor adoptive parents had been convicted of criminality activity. When one of the adoptive parents was criminal, the figure rose to 6.7%, but when both biological parents were criminal, the figure was nearly twice as high – 12.1%.[22]

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[18] Wright, 1997, 64.
[19] Wright, 1997, 60.
[20] Holden, 2001.
[21] Haller, 1963, 17.
[22] Wright, 1997, 123.

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At first the left tended to sympathize with biological positivism, but soon Marxists came to view crime as environmentally determined. The anarchists even sympathized with criminals, who were seen as rebels challenging social injustice. Crime in a capitalist system came under the rubric of justified revolution in miniature. If the egalitarian Franz Boaz was the "father" of anthropology, the paternal rights to criminology (sociology's "stepchild") have been ceded to Edwin E. Sutherland, for whom learning was entirely a social product, disconnected from biological structures. In 1914 he published *Criminology*, the most influential book of the twentieth century on the topic. Thanks in large measure to its resonance, and especially that of later reworked editions, many textbooks in the field never even mentioned IQ, and when they did the treatment was largely dismissive.

At the same time, intelligence studies have consistently demonstrated a lower IQ among those found to have committed criminal acts (other than "white collar crime") than among the general population. The intelligence ratings of 200 juvenile offenders consigned to training schools in Iowa show a mean IQ of 90.4 for the boys and 94.1 for the girls. The mean IQ for nondelinquents was 103 for boys and 105.5 for girls.[23] The 1969 police records of over 3,600 boys in Contra Costa County, California, show a relationship between IQ and delinquency of -0.31.87 A group of 411 London boys was followed over a ten-year period so as to compare delinquent and non-delinquent groups. While only one in fifty boys with an IQ of 110 or more was a recidivist, one in five of those with an IQ of 90 or less fell into this category.[24] Since the advent of the revised Stanford Binet and the Wechsler-Bellevue scales in the late 1930s, it has been consistently found that samples of delinquents differ from the general population by about 8 IQ points[25] – a significant but not an overwhelming difference. One can only surmise that perhaps the gap would be even narrower if it were only possible to control for a higher arrest record among juveniles less skillful in the art of deception. The same general tendency exists within the adult population. Criminal offenders have average IQs of

[23] Lunden, 1964, 86.

[24] Hirschi/Hindelang, 1977, 573-574.

[25] Hirschi/Hindelang, 1977, 581.

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about 92, that is, 8 points or one-half standard deviation below the mean.[26]

What is actually happening? Life itself is a cruel competition, where the vanquished have ended up more than once skewered and slowly roasting over the victor's cooking fire. Contemporary Western societies impose rules that allow some people more success. Imagine a situation where the fastest runner would be the only one to get supper. After a time the slower competitors would be sorely tempted to simply hit him on the head rather than futilely attempt to outdo him in speed. The same is true with intelligence. The successful stockbroker, surgeon, and lawyer do not need to commit crime to gain wealth, although some do. White collar crime is a serious problem in our society, but while we do not wish to defend it, it is perhaps not entirely relevant to the reproductive issues we are discussing here (some might even argue that white collar crime, undesirable as it is, involves a willingness to take calculated risks, involving adventuresomeness, a quality which we may not wish to breed out of the genotype). But further down the professional scale are those individuals whose low intelligence literally dooms them to a life of material slavery. Few of their criminal acts are of a kind that involve intelligent adventuresomeness: most seeming to be linked to a sense of desperation and an inability to escape from their adverse environment. To what extent is inherited low altruism a factor in crime, both "white collar" or intelligence crime, and violent, unintelligent crime? Before axing the old pawnbroker in Dostoevsky's *Crime and Punishment*, Raskolnikov first rationalizes away his guilt. Clearly, the general population contains a vast pool of individuals for whom guilt is, at best, an underdeveloped emotion.

But whereas mankind has today effectively negated the impact of all but the crudest forms of natural selection, and modern science holds out the promise of enabling mankind, within perhaps just another generation, of having the means to be able to guide its own evolutionary development, can we really trust the awesome power of guiding human evolution to the politicians and bureaucrats? For it is they who would control all and any forms of human intervention concerning eugenic selection. It is one thing to point to the need for eugenic action,

[26] Herrnstein/Murray, 1994, 235, 242, 735.

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but it is another to devise suitable measures by which humanity can substitute directed evolution for the dysgenic trends which have substantially replaced natural selection where human populations are concerned.

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Thoughts on the Chain-Like Homeland of the Uralic People

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The author tackles the thorny question of the unity and origins of the Uralic languages, and suggests that thousands of years before any proto-Fenno-Ugric or proto-Ob-Ugrian or proto-Samoyed may have developed there was a loose culture area extending across northern Eurasia from Fenno-Scandinavia to the Pacific, containing a wide variety of speech forms. To the east these evolved or amalgamated into a Paleo-Siberian group of languages and to the west into the Fenno-Ugric languages. However, some of the peoples in the center may have become separated from the Paleo-Siberian people to the east, by the intrusion of new peoples into the area of the Yenesei from the southeast. As a result the more western Paleo-Siberians would have been brought into closer contact with the Fenno-Ugric speakers to their west, and the resultant linguistic influences may have resulted in the Ob-Ugrian and Samoyed languages. Thus he sees no common homeland for all speakers of Uralic languages, but rather a chain-like cultural region. To support this view he draws primarily on linguistic evidence, but also shows how this theory would fit the available archeological evidence for cultural evolution and migration. Although he does discuss physical anthropology, his theory would serve to explain the biological differences between the Caucasoid Finns and Estonians of today, who speak Uralic languages, and the more Mongoloid Samoyed and Ugrians whose languages are also classified as Uralic.

Key Words: Uralic; Fenno-Uralic; Ob-Ugrian; Samoyed; Mordvin; Paleo-Siberian; Fenno-Scandinavia; Siberian Paleolithic.

Basic Concepts and their Background

The Protolanguage

Protolanguge is the term for an idiom from which languages of a certain language family originated, or the common form from which they can be derived. The protolanguage is from a linguistic point-of-view a purely hypothetical entity created purely through reconstruction for which there are no written records, and we should not assume this reconstruction to be

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identical with a language that has been used at some time but is now unknown to the living generations. The further back we go in time, the more likely it is that the protolanguage can be only reconstructed. (Similarly, there are also so-called *intermediate protolanguages* from which languages belonging to linguistic subfamilies originate. For example, for the Slavic and Romance groups of the Indo-European family, we have an adequate amount of material for their reconstruction). A reconstructed protolanguage is a synthesis of historical- and comparative linguistics, and other linguistic methods used in reconstruction studies – for example, convergence-theory, contact theory, linguistic geography, and universality research. This variety of methods used explains why the reconstruction of a given protolanguage changes with time.

The view of the protolanguage assumed by the historical and comparative linguists represents a relatively late time period of the development of languages. The above-mentioned protolanguages diverged about six thousand years ago according to the view developed in the Uralic and Indo-European linguistics. We have no material about their early stages of development. We have only assumptions.

Based on a general survey of the human language development, anthropology, and archeology of the North-Eurasian language zone (NELZ), we can ascertain that the so-called protolanguage(s) also have prehistory, the time depth of which surpasses greatly that of its later stage(s).

Other characteristics of the protolanguage:

- An idiom called a protolanguage can be considered a protolanguage only when it is viewed in a retrospective way.
- Although languages of a language family derive from a single protolanguage it does not mean that old grammatical and lexical elements developed during the so-called protolanguage stage. There are reasons to assume that certain elements are inherited from time periods predating the protolanguage period.
- A protolanguage, like any natural language, was not a uniform language. The earlier heterogenous stage of different levels of the language (phonetics, morphology, syntax, lexicon, semantics) reflects also in modern daughter languages.

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- A protolanguage developed from different groups and unions of languages. It is possible that regroupings (of languages) occurred also within the language groups during the millennia after the protolanguage diverged.

A protolanguage is a result of a *language union* (Sprachbund) of languages belonging to the same or different types of languages. In other words, it is a *lingua franca*, the development and breakdown of which we can describe in the following way:[2]

A Family Tree

Developments and mutual relationships of the Uralic languages are traditionally described with the help of the commonly known *family tree* model. A protolanguage is according to this model a trunk of a tree from which the so-called intermediate protolanguages (Samoyed; Ugric; Finno-Permian; Permian; Finno-Volgaic; Volgaic; Baltic-Finnic) branch as tree branches. The view based on the family tree model is still prominent in the field, as well as in the prominent Uralistic works although there are also other hypothetical models.

The Homeland

The homeland (or *Urheimet*) concept is based in large part on the family tree theory, a view according to which languages belonging to the same language family originated from a common proto-language that was spoken by a common ancestral population, which spread geographically from a limited geographical area known as the homeland. When we speak about the homeland, we must isolate the Uralian and Finno-Ugric homeland, as well as the ancient living areas of different Uralic-speaking people.

Several theories of the geographic location of the Uralic and Finno-Ugric homeland, which can be defined only with the help of reconstruction, have been born during the last century and a half. The problem is that the methods of the two fields – archeology and linguistics – are difficult, if not impossible, to make comparable.

The homeland theories can be divided into two groups based on methods used: One group of theories is based on

[2]Pusztay, János, Zur Herausbildung des Proto-uralischen. – Specimina Sibirica III, Quinque-ecclesiae (Pécs), 1990, p. 157-167.

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linguistic paleontology (in other words, plant- and animal geography), the second group of theories is based more on theories derived from archeological findings. The classic reconstruction of the Volga-Kama homeland, *Gyula László*'s reconstruction of a homeland located between the Baltic Sea and the Oka River, as well as *Péter Hajdú*'s reconstruction of a western Siberian homeland – which is today the most widely spread idea – are based on linguistic paleontology. The theory of a geographically large homeland supported mainly by Finnish and Estonian researchers is based primarily on archeology. According to this theory, the Uralic homeland was located in a broad zone reaching from the Baltic Sea to the Ural Mountains, the center of which was in the Volga region.[3] The homeland theories based on paleolinguistics are strongly connected to the linguistic family tree model. Both – either without knowing or ignoring prehistoric processes – assume that there were extensive east-to-west population movements during the prehistoric periods.

A Linguistic Model

Tradition and a New Solution

As we noticed above, the protolanguage and the homeland concepts are closely related. As a result, linguistics should have a decisive role also in the reconstruction of the homeland. Historical and comparative linguistics' protolanguage reconstruction follows in principle the family tree model. In practice, there are, however, illogicalities in the reconstruction methods of both the vocabulary and the grammar. Two examples: dual forms and the beginning stages of the development of the objective (transitive) conjugation are reconstructed in the protolanguage. Neither assumption is possible if we follow the family tree model consistently. Dual forms exists only in the (Ob-)Ugrian and Samoyed languages as well as in the Saami (Lapp) languages, and the difference between the subjective (intransitive) and objective (transitive) conjugation exists in Ugric- and Samoyed languages and in Mordvin. These languages are, however, located so far from each other in the language tree that the dual and two

[3]About the homeland theories see Hajdú, Péter – Domokos Péter, Uráli nyelvrokonaink (Budapest 1978), p. 45-60; and Bereczky Gábor, A magyar nyelv finnugor alapjai. Universitas Kiadó, (Budapest 1996).

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conjugations cannot be explained by a common inheritance (or shared common origin). At the same time one can say without problems that both phenomena – and some other here unmentioned characteristics – have a very old origin, dating at least to the protolanguage. We can give an acceptable explanation only by changing the study method and broadening the scope of study material. The answer is provided by paleolinguistics as well as by the study of areal linguistics of the Uralic languages.

The paleolinguistic studies of the Uralic languages have stayed within the boundaries of the Uralic protolanguage so far. Their goal was to reconstruct the protolanguage. Paleolinguistic problems include, for example, the case endings of the protolanguage, deriving the development of the numerals, the relationships of postpositions as well as case endings with pronoun roots and pronoun suffixes, possessive person categories, and the development of conjugations through the agglutination of pronouns. Solving these questions correctly has been considered "an internal affair" of the Uralic protolanguage. Therefore, it appears that the above-mentioned, as well as some other linguistic categories, have developed during the time period of the protolanguage. On the other hand, these Uralic paleolinguistic phenomena date chronologically so far from each other that we must date them further back in time than the period when the Uralic protolanguage emerged.

We can arrive at new results by using a complex and composite method. While maintaining the value of the traditional historic and comparative linguistics, we should better utilize the results and methods of linguistic typology, areal linguistics, and paleolinguistics.

According to *linguistic typology*, similar languages have gone through similar processes in their development. According to *areal linguistics*, languages developed in mutual interaction and linguistic convergence occurred in all geographic regions as a result of which the languages became step-by-step more converged. Development takes place through mutual influences of different languages. Linguistic unions (*sprachbund*) were born through long-term interaction, and within these linguistic unions *lingua franca* served for communication between separate groups speaking different languages. *Paleolinguistics*, which studies the origin of languages, supports the assumption

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according to which the development of languages started several hundreds of thousands of years ago before the so-called protolanguage period.

It is meaningful to take the most archaic level, *morphology*, as the foundation of the research. In comparison to syntax, phonetics, and lexicon, it is the level of language which changes with the slowest rate and most strongly opposes foreign linguistic influences.

Linguistic Environment

The research must be expanded to include languages of the geographic region – *North Eurasian Language Zone* (NELZ) – in which the Uralic language family developed. The North Eurasian language zone reaches from Fennoscandia to the Pacific Ocean. This zone is even today linguistically very rich, and it has very large significance both culturally as well as linguistically. Numerous Eurasian language families were born in this area, and the ancestors of some North- and South American Indian tribes originated from this region thousands of years ago.

NELZ has even today several language families, for example Uralic- and Altaic families, as well as until now few studies of the Paleosiberian languages. The latter includes five language families: Yenisey languages (Ket and now extinct Kotti, Arini as well as Assaani), Yukaghir-Chuvantsy languages (today only Yukaghir is spoken), Chukchi-Kamchatkan languages (Chukchi, Koryak, Kerek, Alyutor, Itelmeeni), Eskimo-Aleutian languages (numerous Eskimo languages and Aleut, although not all researchers include this language group as a Eurasian language), Gilyak (according to todays's information an independent language without linguistic relatives). Typological homogeneity is characteristic of the NELZ. Languages of this zone belong to agglutinating or agglutinating-isolative type. The only exceptions are the originally flekterative Yenisey-languages. The Ket language's progressive adaptation to the dominant language type of the region is evidence of the homogenizing influence of the region. Regardless of to which language family a particular language belongs, we can notice similar tendencies of development in the languages of the NELZ zone, for example, in the development of case and expressions of numerus system. The similarities do not appear only in the

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development tendencies, but also in the material side of grammatical categories. When speaking about differences, it is significant that languages of the zone's western parts (the Baltic-Finnish, Cheremis, and Permian languages) are so-called *tempus* languages, and the eastern languages (mainly Paleosiberian languages) are *aspect* languages. In the languages of the contact area (Ugrian- Samoyed-, and Yenisey-languages) both element types and, therefore, redundancy appear.

The Model

By studying the archaic levels of the Uralic languages as well as idioms – first of all Paleosiberian languages – of the North Eurasian language zone with the help of the linguistic analyses (typological, structural, material) it was possible to structure the historical and paleolinguistic background of the birth of the Uralic protolanguage. The above-mentioned processes acted thousands of years before the birth of the protolanguage.

Reconstructed linguistic similarities derived from the proto-language can be divided into two groups. The first one includes morphological traits that are in almost all of the Uralic languages. The second one includes those traits that are commonly presented as also Proto-Uralian, or at least Proto-Finno-Ugrian, but they have not spread outside a certain easily defined group (for example, dual, differentiation of subjective- and objective conjugation).

Several elements found in the Uralic languages are insignificant for defining the linguistic relationship because they appear in other languages of the NELZ (for example, endings of the cases dealing with places, numeral markings). Elements that appear only in some Uralic languages should not be derived – deviating from today's practice – from a common protolanguage. The same elements are found also mostly in Paleosiberian languages, which are spoken in the same geographic regions as the Uralic languages. This is why our conclusions dealing with the question of the proto-language deviate from the traditional conclusions.

Morphological and morphosyntactic research of the Uralic languages, as well as the linguistic picture analysis of the geographic area in question in which Uralic languages are spoken among other languages is leading more and more to a thought that we cannot speak about the protolanguage in its

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classical meaning. The Uralic languages are spoken in the western and central regions of the North Eurasian language zone. These languages and Paleosiberian languages east of them (as well as languages belonging to the Altaic family) cover a geographically enormous area. As already mentioned above, this area is in large part typologically homogenous and also several linguistic categories are formed there from both structural and material points-of-view in a similar fashion. In the area of question one can isolate language unions also within different language families. The Paleosiberian languages have several material as well as structural language characteristics, which among other things are characteristic of the Uralic protolanguage, or which are in other ways characteristic also to the Uralic languages (differentiating of subjective and objective conjugation, the appearance of dual, predicative flexion of nouns, etc.). In addition, these common characteristics with the Paleosiberian languages appear only in certain groups of the Uralic languages, Ugric- and Samoyed languages, as well as – in large part – in Mordvin. From this we can conclude that there were probably several language formations in the North-Eurasian language zone. Two, maybe three (one in the Baltic region, one western Siberian, and maybe one that was located between these two) of these language unions forming a chain can be associated with modern Uralic languages. The western Siberian idiom would have been also a bridge between the western and eastern language formations. (At the same time we must also take into account already extinct languages, or those that have been assimilated and influence as substrates the languages of the region.)

Several markers are characteristic of the eastern union of the Uralic languages:[4]

- the subjective and objective conjugation (Ugrian languages, Mordvin, and Samoyed languages),
- the appearance of dual ([Ob-]Ugrian- and Samoyed languages),
- the expressing of the object with the locative (Hungarian, Mordvin, and Samoyed languages),

[4]Pusztay, János, Diskussionsbeiträge zur Grundsprachenforschung (Beispiel: das Proto-Uralische). Veröffentlichungen der Societas Uralo-Altaica 43 (Wiesbaden 1995).

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- marking of pluralism of the object in the structure of the verb (Ob-Ugrian, Mordvin, and Samoyed languages),
- the predicative flexion of the noun (Mordvin and Samoyed languages),
- the redundancy of marking the tense (Ob-Ugrian and Samoyed languages).

These markers, or at least some of them, could be explained by linguistic innovations, internal development, or geographical contacts. Ob-Ugrian and Samoyed languages developed in a common geographic region since very ancient times,[5] which also has Paleosiberian (and Altaic) contacts. On the other hand, Mordvin is traditionally considered as Volga-Finnic language regardless of the above-mentioned markers. We must note in the case of Mordvin linguistic development causing it to have eastern (Uralic) language markers impossibly uncharacteristic to its geographic markers. Exactly for this reason, we cannot consider Mordvin solely as a member of the eastern union of the Uralic languages,[6] but in addition the markers in question must be interpreted as old eastern traits characterizing Siberian languages.

Due to the close association of the protolanguage and the homeland – from a linguistic point of view – we cannot talk about a common and geographically homogenous homeland. A so-called chain-like homeland is considerably more believable. A chain of homelands, which included ancestors of the Uralic peoples, consisted like the protolanguage of two or three members, and extended from the Baltic Sea to western Siberia. It had in addition through its eastern area of habitation a contact to non-Uralian peoples. (the Uralic homeland reconstructed by Péter Hajdú might be identified with the area of habitation of the eastern union)

We can assume that there were groups who moved between the elements of the chain-like homeland and did not belong to any larger group permanently. I used to consider ancestors of Saami as such, but the most recent genetic studies point in a

[5]Helimskij, Evgenij, Drevnejshie vengersko-samodijskie jazykovye paralleli. (Moskva 1982).

[6]Pusztay, János, Zur Stellung des Mordvinischen (Finnisch-Ugrische Mitteilungen 12/13, Hamburg 1989), p. 99-116.

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different direction.[7] Languages of the western and central groups were actually Finno-Ugric idioms. The eastern union is characterized by – in addition to the general characteristics of the NELZ – (Paleo)Siberian morphological characteristics. So far it has not yet been proven, but it is quite likely that some culture which arrived from the south about 8-10 thousand years ago, forced its way to the Yenisey Valley separating the group in question from more eastern unions by forcing it to the west in the direction of the Finno-Ugrian speakers. The result was that people of the eastern union became more closely associated than before with the Finno-Ugric people, and the so-called Uralic period had its beginnings. The vocabulary of the eastern union changed then – in some extent – into Finno-Ugrian.

The eastern union is an intermediary between the Finno-Ugrian languages/peoples located west of it and the (Paleo)Siberian languages/peoples located east of it. The eastern union is Siberian in respect to the special grammatical traits, but its vocabulary is dominated by Finno-Ugrian material.

(Different unions are naturally not homogenous. They have developed from several – possibly both genetically and typologically different – languages' mutual influence. A *lingua franca*, societies' media of communication, is the result of long term interaction, which – from the retrospective point of view – becomes the protolanguage.

In a similar fashion, just as the eastern union is the intermediary between the western [the Finno-Ugrians] and the eastern [Paleosiberian] languages, some languages can have the function of a bridge within a union. For example, there are several concepts that can be expressed with two different words in the Ugric languages. One of these words has its equivalent only in the Finno-Ugrian languages, the other has it only in the Samoyed languages.)[8]

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[7]Sammallahti, Pekka, Language and Roots. Congressus Octavus Internationalis Fenno-Ugristarum, Pars I (Jyväskylä 1995), p. 143-153; Kalevi Wiik, Itämerensuomalaisten kansojen ja kielten syntykysymyksiä. (Manuscript, Turku 1995); Kalevi Wiik, Põhja-Euroopa rahvaste ja keelte päritolu küsimusi. (Keel ja Kirjandus, Tallinn 1995), p. 581-589.

[8]Pusztay, János, Zur Analyse des protouralischen Wortschatzes aufgrund des Uralischen Etymologischen Wörterbuchs. (Linguistica Uralica 27. Tallinn), p. 157-176; Pusztay, Diskussionsbeiträge.

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Archeological Background

Although we did not take into account our model's possible connection to archeological cultures, it is clear that an overview of the archeological background has value in determining what people or ethnicity formed the society of the homeland.

According to archeologists, inter-territorial complexes of the Mesolithic and Neolithic periods formed enormous ethnic and cultural zones, within which independent archeological cultures can still be clearly separated. Presumably a culture zone where bifaced stone tools were used was located between the Raina to the Chukchi Peninsula in northern Eurasia during the beginning of the Upper Paleolithic period (about 35,000 – 22,000 years ago). These cultures spread according to some studies from Europe to Asia. Other researchers think that we can talk about different contemporary cultures that were close to each other from technological and typological points of view. The periods of the archeological cultures of Siberia are quite accurately determined today. It has become clear that in the entire area, which reached east from the Yenisey Valley and the Amur Valley in the south, had during the same period usually the same accurately definable culture within which there can naturally develop local repetitions. The cultural change in Northeast Asia was usually a result of migrations coming commonly from the south and southwest. The study of mythological motives indicates that the oldest mythological ideas originate from the late Paleolithic period of the Old World. This period agrees roughly with the oldest cultural period of North Asia.

The transition from the Middle Paleolithic Period to the Upper Paleolithic Period took place about 35,000 years ago in Siberia. The oldest Upper Paleolithic cultures probably belong to the *Djuktai* tradition. Material of this culture is found also in the Ob- and Yenisey Valleys. Genetically-related cultures of the central Asian cultures appeared about 22,000 – 20,000 years ago also along the shores of the Yenisey and Angara and possibly even in the Selenga Valley. Two culture areas were formed, the western (*Maltinsko-Afontovo*) and the eastern (*Djuktai*). The boundary between them followed the water divide of the Yenisey- and Lena Rivers. Contact zones developed where the two cultures met. The *Djuktai* culture changed (10,800 – 6200 BC) into the *Shumgin* culture, whose main subsistence was

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hunting moose in the Taiga zone and reindeer in the tundra. Its cultural material lacks entirely the artifacts that were characteristic of the *Djuktai*-period. The population was not either genetically associated with the *Djuktai*-population, but with the Paleolithic period reindeer hunters of the Yenisey region who arrived in the Lena Valley ten and a half thousand years ago during the Pleistocene-Holocene transition. A northern forest culture derivative of the Upper Ob culture, dating to the IV-III millennium BC, survived in the Tomsk region. Ceramics, stone- and less commonly bone tools have been found as a result of archeological excavations. The Neolithic culture of the region had two ceramic traditions. Of these, the pitted comb ceramics had spread from the Urals all the way to the Baltic region. The other culture – which is characterized by straight and wavy lined, pitted and triangular-shaped motives – characterizes most closely the local Neolithic tradition.

The traditional homeland theory gives reason to assume that the population of the area was constantly dividing and some of the groups moved away. Results of archeological studies are in conflict with this view at least in the case of the Baltic-Finns because they indicate 9000 – 10,000 years of settlement continuity in the regions of modern Finland and Estonia. This finding rules out the theory that the Baltic-Finns arrived in these regions about 3000 years ago.[9]

The Role of Genetic Studies

In addition to linguistic studies, other fields of study have a growing role in solving the homeland question. Like the linguistic based model discussed above, recent genetic studies suggest explanations that deviate entirely from the traditional explanations.

Kalevi Wiik has proposed in this volume and in a study published in Estonian an extremely exciting theory of the birth of the protolanguage.[10] (*Ago Künnap* has given a through overview of studies dealing with the origin of the Uralic languages.[11]) Assumptions and conclusions of Wiik's theory are

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[9]Julku, Kyösti, Suomalais-ugrilaisten alkukodin ongelma. In: Rajamailla II (1995), (Studia Historica Septentrionalia 30, Rovaniemi 1996), p. 134-153.

[10]Wiik, Itämerensuomalaisten; Wiik, Põhja-Euroopa.

[11]Künnap, Ago, Uurali ja eriti samojeedi keelte päritolu uusimaid seletusi.

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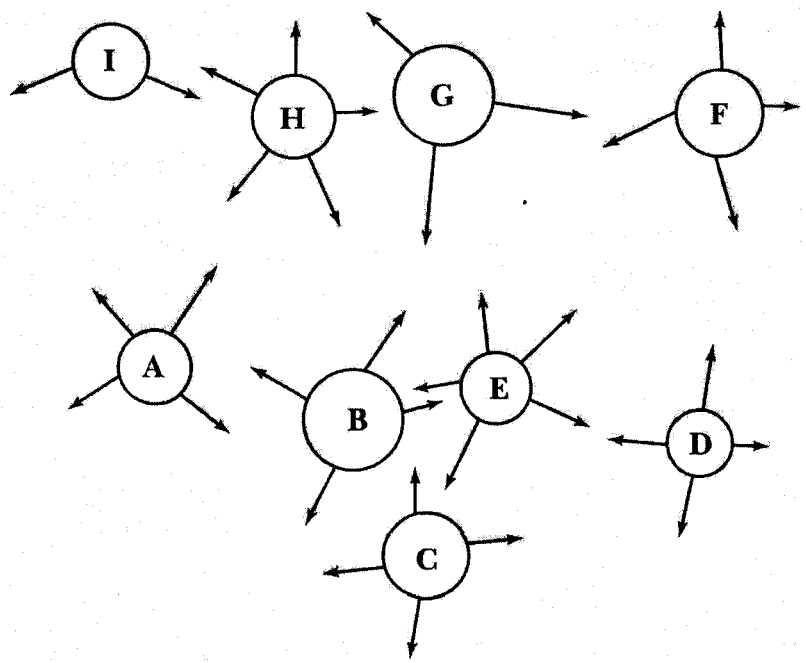
very close to that of my theory, although the starting point is different.

Wiik's theory, the idea of the chain-like homeland discussed in this article, and the reconstruction of the proto-language are still going to be argued a great deal. (The first argument against Wiik's theory has been published.[12]). One thing is still certain: the traditional explanations have reached their life span. They must be modified by using results and data of the classic Finno-Ugric- and historical-comparative linguistics, but at the same time taking into account new views and methods.

Figure 1. Languages in a Loose Contact.



(Fenno-Ugristica 19, Tartu 1996), p. 174-197.

[12]Mikone, Eve, Suomalais-ugrilaisia kieliä puhuvan väestön alkuperä. (Virittäjä, Helsinki 1996), p. 401-422.

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Figure 2. Languages in a Closer Contact.

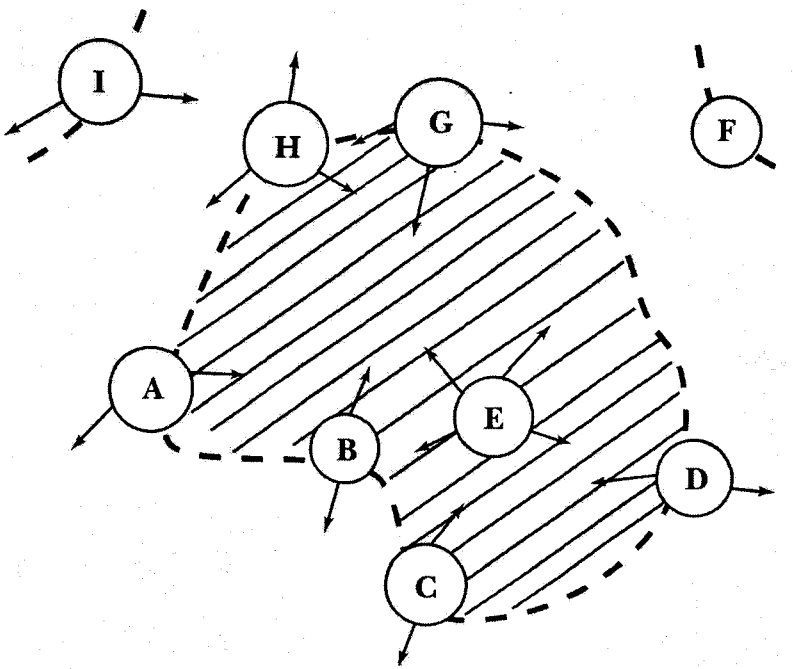

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Figure 3. The Development and Breakdown of a Protolanguage.

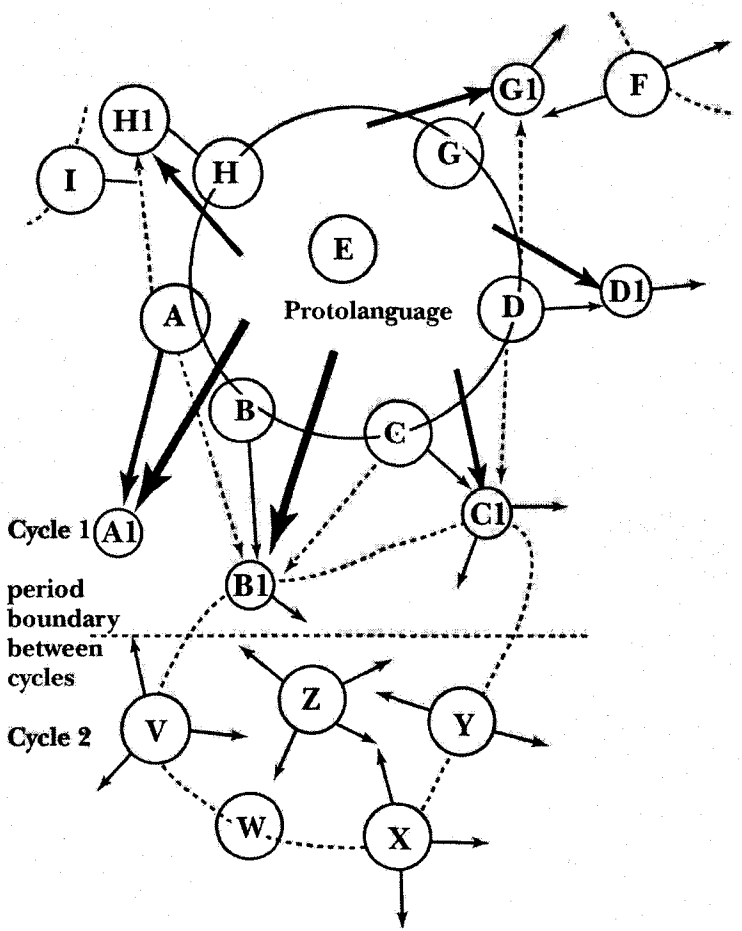

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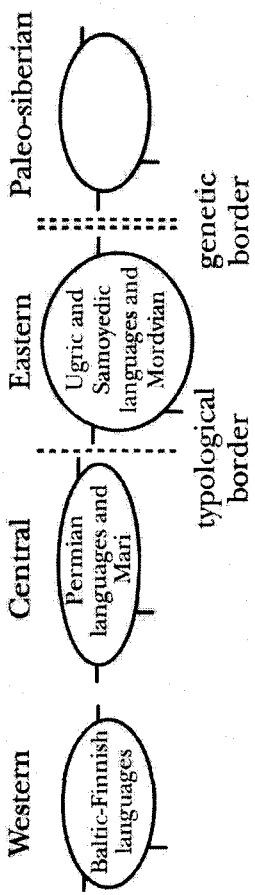
Figure 4. Typological and Genetic Boundaries.



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Wyrd, Causality, and Providence
A Speculative Essay

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The arrival of Middle Eastern monotheism in Europe replaced a prior proto-scientific belief in causality with the teleological concept of Divine Providence, or the Will of God. Ancient Greek philosophy was supplanted by a demand that men should stop seeking to understand the nature of the causal forces at work around them, and accept these simply as the work of an all-powerful monotheistic God. A new, organized priestly class demanded that men must accept the "revealed" word of their God without question. The academy founded by Plato was ordered closed, and as Bertha Phillpotts first showed us, even among the Germanic nations the concept of *Wyrd*, which postulated an all-pervasive causal force, was replaced by the concept of Divine intervention or Providence. Europe entered the Dark Ages, and remained there until the rediscovery of the empirical character of the pagan classical scholarship made possible the Renaissance and the rise of modern science.

Key Words: Mesopotamian priesthood; Christianity; European paganism; monotheism; Greek philosophy; Germanic mythology; Anglo-Saxon literature; *Wyrd*; causality; Providence; Modern Science.

Michael Horowitz, Oriental Monotheism, and Organized Priesthoods

Michael Horowitz[1] has contrasted the success of the Greeks in laying the foundations of a scientific understanding of the world with the failure of the Mesopotamians, who had indeed created an advanced civilization, but never developed an objective science. He attributed this to their belief in the overriding power of their gods and the priests who serve these gods. Horowitz argued that the early Mesopotamian and subsequent Semitic cultures tended to believe that humanity was created to "relieve the gods of toil" and that righteous persons

[1] This essay was largely inspired by reflections on a study by Michael Horowitz (see footnote 2) and the more extensive research of the late Bertha Phillpotts (see footnote 4). However, neither developed their respective themes in the direction that I have followed, and their work is totally free from responsibility for any inaccuracies, fallacious interpretations, or overstatements that may have crept into the indubitably venturesome hypothesis advanced in this paper.

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should serve and obey them. This belief was rigidly sustained by a large and well-organized priestly class that exerted ultimate power over the people, but even these priests were too fearful of their gods to dare to question the workings of the world, which they attributed wholly to the will of divine beings:

> A hymn to the storm god Enlil quails before the deity's "wild, glaring eyes." "What has he planned? What is in Enlil's holy mind?" the anxious supplicant wonders. "What has he planned against me in his holy mind?" Apparently, Enlil may strike without cause – merely being human is sufficient provocation.[2]

What effect did this theology have on Babylonian scholars?

> Nature was considered both sacred and potentially hostile. The Sumerians had warned that the laws of nature are like the "laws of the abyss – none can look upon them".... From the second millennium B.C., Babylonian scribes are, to be sure, more adventurous. But even they believe the study of nature is a sacred enterprise. The truth must not be wrenched from the gods – natural facts must be gradually "revealed" according to divine pleasure.... by attempting to rationalize the universe [a man] would be courting heresy: he would be threatening the domain of the deities. This transgression would almost certainly be rebuked by priestly superiors.

By contrast, Horowitz saw Greek society as being illuminated by an aristocracy that was essentially free from domination by priests. Indeed, the Greek priests served only individual gods, whose supernatural powers were limited to specific functions and were not regarded as all-powerful beings. Consequently learning was not restricted to the priesthood, who were not organized into any dominant hierarchy. As a result, the Greek aristocrats were able to allow their curiosity to enquire into the secrets of the world around them:

> An energetic, creative aristocracy supplied percolating talent and the affluence and leisure to deploy it. An anarchic theology liberated Greek theoretical imagination about the natural world.

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[2] This and the following four Horowitz quotations are to be found in Michael G. Horowitz , "The Scientific Dialectic of Ancient Greece and the Cultural Tradition of Indo-European Speakers" in *Journal of Indo-European Studies,* Volume 24, Numbers, 3&4, Fall/Winter 1996.

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Indeed, although Horowitz does not mention it, the head of each Greek kinship unit conducted the socio-religious rituals of the kin group. All important ritual and priestly duties relating to the organization of society were conducted by the heads of families and phratries, and by kings who generally derived their authority by virtue of their descent, real or imagined, from the founder of the nation. Free from subordination to one or more all-powerful gods, and superior to the priests who served the individual nature gods, the aristocrats of Greek society were at liberty to speculate on the nature of the universe and seek explanations of what happens in it. As Horowitz says:

> Greek culture offers its pioneering philosophers an encouraging social, political, theological, and linguistic environment for the development of the scientific dialectic:
>
> Socially: It boasts an active, confident, hegemonic class of aristocrats, with a unique tradition of individual thought and behavior. This aristocracy had never in its cultural memory been intimidated by religious dogma. Indeed, it is from this class of aristocrats that Greece's first philosophers spring.

Fustel de Coulanges, European Paganism, and Causality

Absent the Oriental tendency to portray Divine beings as all-powerful despots, pagan Europeans in general appear early to have concluded that the universe was governed by a web of causality. They recognized gods who were endowed with supernatural powers, and they had priests who served these gods – but these gods did not create the universe, and were themselves but a part of it. The French nineteenth century scholar Numa Denis Fustel de Coulanges early demonstrated that the true religiosity of ancient Greece, Rome, and the Celtic and Germanic nations. was centered on the religion of the family, clan, phratry, gens, and tribe.[3] The moral ties and rituals that truly bound pre-Christian European communities together were based on kinship. A man owed his foremost duty to his kinfolk – and not only to his living kinsmen but also to those who had gone before him and given life to him, and to his

[3] See Numa Denis Fustel de Coulanges and J. Jamieson, *Family, Kin and City-State,* Scott-Townsend Publishers, Washington D.C. for a full exposition of the familial nature of Greek and Roman religion, which centered on the concept of kinship, with the gods being almost incidental to the religious bond that held family, tribe and state together.

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descendants who would come after him. Men were powerless before the causal forces that determined the events taking place around them and thereby shaped their destiny, but a proud and courageous man could win fame for himself and honor for his descendants by striving courageously against the slings and arrows of misfortune. A man could not avoid his destiny – because he was caught up in the vast nexus of causality that permeated the Universe, a force that moved irresistibly from the past, through the present, and onwards into the future.

Causality in the form of The Three Fates

The fundamental concept of causality, as the all-powerful force shaping the workings of the Universe, was deeply rooted in the culture of ancient Greece and Rome. The three Fates or Moirae of the Greeks were believed to weave the web of causality: Clotho, with her spindle, spinning the causal threads that vitalized the world and all that was in it: Lachesis, pointing with her staff to a globe; and Atropos, with her sundial, and scissors. Ready to cut the causal thread of life. The Romans knew these same Fates as the Parcae. And similarly, the Germanic people recognized these three sisters who controlled causality as the Norns, calling them Urthr, Verdandi and Skuld, names which might quite well be parsed as *Was*, *Is* and *Will be.*

Even as late as Shakespeare, Englishmen still remembered three weird sisters, albeit in Christian garb, as elderly, immortal witches, who knew the secrets of Fate and could foretell the future.

In brief, European paganism to either a greater or a lesser extent sensed the reality of causality as the moving force behind all natural phenomena. Their gods were immortal and possessed superhuman powers, but they did not create the Universe and were themselves only one aspect of it. Beyond the ties that bound society together there was a metaphysical aspect to the religiosity of pre-Christian Europe that reflected a fascination with nature and a conscious sensitivity of the pulse of the Universe, untrammeled by any fear of an all-powerful monotheistic god. The less sophisticated made pre-scientific attempts to manipulate causality by the pre-scientific means that we call magic, but the more sophisticated applied Aristotelean logic to the task of uncovering the causal forces that vitalized nature, and by so doing laid the foundations for modern

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science. While the Babylonian, Assyrian and Egyptian priesthood slavishly served their gods, fearing to question their motives and desiring only to placate their anger and carry out their wishes, the myths of ancient European paganism tell of heroes challenging the gods to reveal whatever information they possessed concerning the secrets of the Universe, of searching for the golden apple of wisdom, and even the more primitive Germanic myths tell of Odin giving an eye in his search for knowledge.

Martha Phillpotts and *Wyrd*

A reading of the works of Dame Martha Phillpotts, a pioneer authority on Anglo-Saxon and early Germanic culture, provides insight into the pagan European concept of an impersonal causality, and supports Horowitz's explanation of why true science emerged in Europe rather than in the earlier civilizations of the Middle East. The Germanic-speaking peoples of Northern Europe, like the Greeks and Romans, also lived free from any fear of a single all-powerful god, and Phillpotts shows us how the Germanic peoples intuitively shared in the same proto-scientific appreciation of causality that we find in more developed form amongst the Greek and Roman intelligentsia. In Northern Europe this causal force was identified as *Wyrd*, and as such it played a major role in Germanic culture. *Wyrd* as a word is the abstract form of the Germanic verb *weorthan*, "to come to be" thus meaning "that which happens."[4]

As she declares:[5]

> There must be something more in Anglo-Saxon paganism than the worship of Woden and Thunor, more than the sanctions of loyalty to a chief, the recognition of *Wyrd* as an impersonal and unapproachable force...
>
> If we can descry the shadowy outline of this earlier, unformulated philosophy, it must be through the medium of the stories and memories of the Heroic Age. The Anglo-Saxons

[4] It may even be possible to suggest that in Germanic myth even the gods appear to have been subject to the overpowering force of *Wyrd*, in so far as they were destined to die fighting against the forces of evil and darkness in the final battle of Ragnorak.

[5] This and the subsequent quotes from Bertha Phillpotts are taken from her essay "*Wyrd* and Providence in Anglo-Saxon Thought," in *Essays and Studies by Members of the English Association*, XII, (1928 for 1927).

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shared in that epic period as freely as any other of the Nordic peoples, and it seems safe to assume that the ideas that lie behind it were also common property.

But she also reveals how Christianity, rooted as it was in an Oriental belief in one or more all-powerful divinities, suppressed the roots of scientific thought in Europe, and substituted the "Will of God" for the more logical pagan concept of impersonal causality.

The Triumph of Christian Monotheism

The Oriental belief in the supreme power of Divinity as described by Horowitz, also inspired the later monotheistic doctrines of Judaism, Christianity and Islam. These three religions accepted no other explanation for natural events than the will of a divine Creator – except on occasion that it was found convenient to hypothecate an anti-God or Devil to explain such unpleasant events as the priests did not choose to attribute to their God.

As a missionary religion that sought to convert all peoples to acknowledge the one true God, Christianity developed subtle techniques to promote conversion, and Christian concepts, generally antithetical to European paganism, eventually replaced even the more deeply-rooted of the pagan concepts. Christian churches were commonly erected on the site of places held holy by pagan myth and tradition; Marriage, which in pagan Europe was a function of kinship, in the eyes of Christianity was not just a compact between two people and their kinfolk, but involved a third party, the Christian God – thus enabling Christianity to breach the walls of the kindred, which lay at the heart of paganism. Christian converts must not question the word of God as revealed by his prophets, for to seek any explanation of the working of the universe other than that contained in His Revealed Word was to do the bidding of the devil. The Christian God was a jealous God, whose ways were at times mystifying, inexplicable, and "wondrous." Christianity had no room for those who asked questions when natural events mystified them, for God was omnipotent, all-powerful, and all that took place was Divine Providence.

Christianity, some of whose roots through John the Baptist reach into the egalitarian communalism of the Essenes, arose as a heresy among the Hebrews at a time when they lived under

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the domination of Rome, whose legions had stormed Masada and destroyed the Temple in Jerusalem. It offered comfort to those who suffered by alleging that their suffering and enforced humility would bring them rewards in the afterlife, while the pride of the Roman ruling clans – the *gens* or gentiles – would bring with it only misery after death.

Christianity became an organized force in Europe when Saul, whose original mission was to suppress the influence of mystery religions and similar heresies among diaspora Hebrew communities, perceived that the Christian heresy was spreading rapidly not only among diaspora Hebrews but among the vast underclass on whose labor the Roman Empire depended. Perceiving its revolutionary egalitarian ideals, a perceptive, enlightened Saul chose to convert to this heresy, and changing his name from Saul to Paul became the prime founder of the Christian Church. As an organized religion this egalitarian Oriental heresy became a powerful revolutionary force which, in the opinion of the historian Gibbon, was a prime contributor to the collapse of the Roman Empire. Christianity helped revenge the fall of Jerusalem.

Providence Supplants *Wyrd*

Just as Christianity, with its emphasis on faith and the unquestioning belief in miracles as acts of God, eventually suppressed the early science of the pagan Greek philosophers and set back scientific innovation in Roman Italy until the advent of the Renaissance, so also it sought to suppress any proto-scientific appreciation of causality among the Germanic peoples who were eventually to emerge as the prime pioneers of modern science. The concept of *Wyrd* as a mechanical causal force was replaced by the idea of Fate as Providence – as the inexplicable Will of God, the wisdom of whose acts should be accepted by his devotees with unquestioning Faith. Christianity had no room for *Wyrd*, since God could more easily work miracles. It is true that *Wyrd* retained such power in the German mind for generations after the advent of Christianity that missionary priests initially sought to conflate pagan *Wyrd* with the Christian concept of Providence, but in the course of time they eventually ensured that it survived only in a distorted and degenerate form as "weird," with all the fearful and ungodly connotations that are associated with "weird" to this day.

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While the pagans had accepted death as the end of life, and represented Hel, the realm of the dead, as an empty nothingness, Christianity offered converts the Justice of God. Each man would be dealt with as his acts deserved in the eyes of the Church. Heaven was to be God's reward for those who submitted to the Church's wishes, but those who rejected the rule of the Church awaited an alternative fate, admission to Hel[l]– now no longer an empty nothingness, but a place of eternal torment. Since these rewards and punishments were to be realized only after death, no living person could ascertain whether they were real, and a man on his deathbed was easily tempted to bequeath a portion of his wealth to the clergy in return for their promise to pray that he should go to paradise, rather than to eternal torture in the Christian version of Hel[l].

As Phillpotts writes:

> These ideas of Heaven, Hell, and the justice of God, are the three ideas connected with the new faith which we find clearly indicated in Beowulf, and they were no doubt specially characteristic of the first few generations after the conversion.
>
> Clearly mere misfortune, mere defeat, was easier to understand in the light of the new knowledge. The victim could be compensated in the next life for his sufferings in this one, though that resistance to the uttermost, that defiance of Fate, so much admired in the heathen times, was now very liable to become mere impiety.

Plato's academy, which had survived for centuries after his death, was eventually closed by order of the Christian emperor of Byzantium because in seeking to understand causal events it challenged the doctrine of divine Providence. Similarly in Northern Europe, under Christian influence *Wyrd* acquired a new and evil meaning, "weird," and those who sought to explore the secrets of causality were portrayed as being aligned with the forces of evil. Some therefore argue that it was not paganism that brought the Dark Ages to Europe, for it was a monotheistic Oriental religion that suppressed the roots of scientific thought. While pagan Europe had encouraged enquiry into the workings of nature, the Christian church suppressed classical teachings and long resisted the revival of science by persecuting those who questioned whether natural forces rather than Providence determined human history, and whether the "revealed" word of

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God was indeed the true explanation for the mysteries of Life and the Universe.

Appendix:

Wyrd, Fate and the Value of Fame

What we know as the Heroic Age in pagan Europe was an expression of the dignity of men who met their fate – as determined by *Wyrd*, the irresistible causal forces that shaped all events – bravely and without flinching. The heroes sensed that they could not resist the causal forces that determined all movement in the universe, but they also intuitively realized that the prestige and social status of their kinsmen and heirs would be enhanced by the fame that they would earn by their conduct. As Bertha Phillpotts expresses it:

> About the references to Fame in Anglo-Saxon and Scandinavian poetry there is a warmth and a passion which ought to warn us against regarding it as the meed of mere physical prowess. It is an assertion that there is something greater than Fate: the strength of will and the courage of human beings, and the memory which could preserve their deeds. Fame and human character: these were the two things against which Fate could not prevail. 'Wealth perishes, kinsfolk perish, one's very self perishes', says the Northern Havamal, 'but fame dies never for him who gets it worthily.'

Only the descendants of the Germanic hero benefit from the bravery with which he meets his fated end. As Byrthwold declares in the Battle of Maldon:

> Soul shall be the more stalwart, heart the higher,
>
> Courage the greater, the more our might diminisheth.

No thought of retreat or shameful escape here, only of the pride, dignity and the courage with which men of iron go to their death – and thereby increased the prestige of their kinfolk and lineal descendants. While the Christian belief in Providence, in the Will of God, encouraged humility, passivity, and submission, the pagan was expected to confront *Wyrd* with courage and dignity.

To the pagan European, just as to his Christian descendants,

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life was short. Bertha Phillpotts points to the legendary simile of the sparrow, whereby the life of man is likened to that of a bird that flits into the thegn's hall where men are feasting, only to quickly exit through another opening in the roof. In contrast to the pagan philosophy which accepted the brevity of the life, and sought eternal life through the survival of their descendants, Christianity promised something very unnatural – eternal afterlife in a perfect heaven for those who obeyed its dictates. It is true that in the Odinist tradition, Germanic warriors were also offered a highly militant form of "pie in the sky" – eternal combat and feasting as members of Odin's Einheriar or warband in Valhalla – but this appears to have been a recent innovation in Northern mythology, and was certainly quite atypical. As Bertha Phillpotts asserts:

> For the Northern peoples there was no reward in a future life, since the doctrine of Valhalla never seems to have made much headway against the far older beliefs that the dead man lived on in his grave-mound or led a shadowy existence in Hell. So, as the Anglo-Saxon gnomic verse says : *Dom bio selast* 'Fame is the best of all.' This attitude to life deserves, I think, the name of a philosophy and it is none the less a coherent philosophy for being unformulated. It depends equally on the conception of Fate and on the conception of Fame. Neither can be taken away without shattering the web of thought.

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The Presence of the Social Father in Inhibiting Young Men's Violence

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The suggestion is offered that the prior presence of a residential and biological father reduces the likelihood of violent behavior by his sons grown to adulthood. Data analyzed across the U.S. indicate that father absence, rather than poverty, was the stronger predictor of young men's violent behavior. The pattern was also found in predictions of violent crime rates based on the level of out of wedlock births from the prior generation. A consonant pattern was also found in cross-national surveys. Accordingly, developmental theories that would explain these patterns need to be constructed and policies that are designed to reduce the incidence of violent crimes and their sequelae may wish to take into account (i) how the presence of social fathers may tamp down violent behavior by their sons and (ii) how to maximize the opportunities for younger children to have an ongoing social father.

Key Words: Father-child relations; Violent behavior; Violent crime; Illegitimacy; Father-absence; Unemployment; Poverty.

The tendency for children from fatherless homes to be over-represented in categories of unwanted behavior has been known for decades (Adams, Milner & Schrepf, 1984; Anderson, 1968; Bereczkei & Csanaky, 1996; Blau & Blau, 1982; Chilton & Merkle, 1972; Monahan, 1972; Mosher, 1969; Robins & Hill 1966; Stevenson & Black, 1988). See Mischel (1961a, 1961b) and Mackey (1985, 1996) for theoretical orientations on the suggested linkages. See Wilson & Herrnstein (1985), Draper & Harpending (1982), Blankenhorn (1995), Parke & Brott (1999), and Popenoe (1996) for reviews of the literature.

However, the absence of a father also commonly implies the loss of the father's income and there is always a potential confounding between the child's lack of a father and the child's environment of poverty (Adams, Milner & Schrepf, 1984;

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Freeman, 1975; Gillespie, 1975; Smith & Krohn, 1995). Two hypotheses are generally offered to explain violent behavior. One portrays violent behavior as the consequence of fatherlessness; and the other views violent crime as a consequence of poverty. The two hypotheses are not mutually exclusive, and it is important to consider what causal relationship, if any, may be behind the statistics.

Five tiers of data are presented to examine the potential relationships. Tier 1 is an examination of the relationships in the U.S. (by state plus the District of Columbia) between violent crime and (i) levels of out-of-wedlock births and (ii) indices of privation. Tier 2 consists of the examination of U.S. relationships (by state plus D.C.) between violent crime in one generation, and (i) levels of out-of-wedlock birth and (ii) indices of privation in a ***prior*** generation. Tier 3 is an examination of the relationships in the U.S., as an aggregate, across time. Tier 4 is a limited cross-cultural examination of the relationships between violent crime and out-of-wedlock births. Tier 5 is a larger cross-cultural survey of the potential relationship between levels of violent crime and a predictive marker for multiple sexual partnerships, which – in turn – can be argued to reflect a diminution of the availability of a father-figure to a young child.

Definitions and Method: U.S. Patterns

Out-of-wedlock births were used to index fatherlessness. It is important to note that divorce, as a variable, is not to be equated with out-of-wedlock births, as a variable, and is not predictive of violent crime rates (see Appendix I). Fathers sometimes cohabit with the mothers of their children, but such arrangements often convert into marriage or else are short-lived, and, on the other hand, the biological parents of a child sometimes marry after the birth of the child. The two dynamics – *Out-of-Wedlock Births* and *Divorce* – are diagnostically separable. (See Mackey & Coney [2000] for a discussion of the separation.). See Appendix I for a more extended explanation of the putative distinction. Violent crime was used to index violent behavior. Male unemployment and per capita income were used to index poverty. Data from the *Statistical Abstract of the United States* (U.S. Bureau of the Census, 1970-2002) were compiled for the tested years for (i) out-of-wedlock births, (ii) rates of violent crime and (iii) rates of male unemployment. and (iv) per capita income. For out-of-

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wedlock births, the percentages of all live births that were out-of-wedlock were the numbers used in computations. For rates of violent crime, the number of violent crimes known to police per 100,000 population were the numbers used for computations. The percentage of adult males who were unemployed was the number used for computations.[2] Note that rates of male unemployment were used rather than overall employment rates – which would include females – because males are so heavily over-represented in crimes of violence (U.S. Bureau of the Census, 2002; U.S. Department of Justice, 1993; Bartol, 1995). The per capita income index was based on personal income. For analyses within the U.S., the units of analysis were either by states plus D.C. within a specified year or by the aggregate U.S. across years. As will be presented in a later section, "nation" was the unit of analysis for cross-cultural analysis.

Limitations of the Data

Ecological Inference

A methodological problem that this type of analysis faces is that of the relationship between aggregate data and individual data. Framed differently, aggregate data are not equipped to isolate behaviors of an individual. Thus, inferences from an aggregate, an ecological unit, are generally inappropriate when directed at any individual. See Robinson (1950) for an early discussion of the problem, and see Borgatta & Jackson (1980), Goodman (1959), Hanushek, Jackson & Kain (1974), King (1997), Langbein & Lichtman (1978) and Pedhazur (1982) for subsequent discussions plus partial solutions to the problem of relating aggregate data to individual behavior. Suffice it to say that the analysis below is not construed to specify how any one individual would or would not behave. The analysis below is content to attempt to discover what – if any – behavior patterns in a community are aligned with other behavior patterns in that same community.

Coarse Units of Analysis

It may be noted that a "state" as well as a "nation" are very coarse units for analysis. Hence, the opportunity for false negatives to occur is increased. However, were a signal to be

[2] Rates of (only) male unemployment were unavailable for 1997. For that year, the male and female rates were combined.

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found within the abundant noise, then the potency of any found relationship is probably more real than merely apparent. And, as presented below, significant relationships were found.

Data were analyzed from across the U.S. by state (plus D.C.) from the time-interval of 1996-1998 (See Table 1). The three-year set was used to minimize the chance that a single aberrant year would create distortions.

Tier 1: Out-of-wedlock Births and Violent Crime (1996 – 1998)

In the U.S., for the time interval (1996-1998), the average correlation between rates of violent crime and levels of out-of-wedlock births was significant (r_p = .800 [sd = .034]; $p < .001$; n = 51): the higher the level of out-of-wedlock births, the higher the violent crime rates. The mean explained variance was .640 ($.800^2$ = .640 = 64.0%). See Table 1.

Violent Crime and Privation

The rate of male unemployment was significantly related to rates of violent crime (r_p =.414 [.096]; $p < .01$; n = 51). The relationship was positive: the higher the unemployment, the higher the rates of violent crime.

Per capita income was also significantly related to violent crime rates (r_p =.383 [sd. = .041], $p < .01$ n = 51). However, the relationship is positive: the higher the per capita income, the higher the rates of violent crime. The significance was driven by the data from the District of Columbia. If D.C. is removed from the database, then the prior significant relationship is also removed: r_p = .152 (s.d. =.016), n.s. n = 50. Accordingly, it seems difficult to align higher income with increased rates of violent crime and then to attribute the increased rates of violent crime as a function of increased privation. See Table 1. Indeed, the case of Washington D.C. suggests that violent crime is positively related not only to fatherlessness but also to race as well as poverty.

Out-of-Wedlock Births vs. Male Unemployment: Compared and Partialled

The correlation between out-of-wedlock birth and rates of violent crime (.800) was statistically larger than the correlation between rates of male unemployment and rates of violent crime (.414) (t = 4.389; $p < .001$; df = 48).

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Because the dependent variable (i.e. rates of violent crime) is the same for all three independent variables (i.e. percentage of out-of-wedlock births as well as rates of male unemployment and per capita income), the correlations can be partialled. Hence, rates of male unemployment were partialled from the correlation between the percentage of out-of-wedlock births and rates of violent crime. The correlation coefficient was re-calculated. The resulting correlation was still significant (r_p = .753; $p < .001$; n = 51). That is, after any predictive power of male unemployment was removed from the correlation between percentage of out-of-wedlock births and violent crime rates, the relationship between out-of-wedlock births and violent crime rates was still significant. The explained variance in violent crime rates attributed to out-of-wedlock births remained at a robust 56.7% ($.753^2 = .567 = 56.7\%$).

When per capita income was partialled from the level of out-of-wedlock births and rates of violent crime, the correlation was still significant (r_p =.810; $p < .001$; df = 48).

When the percentage of out-of-wedlock births was partialled from the correlation between the rates of male unemployment and the rates of violent crime, the resulting correlation was not significant (r_p = .053 [n.s.]). Framed differently, when the explanatory power of out-of-wedlock births was removed from the correlation between male unemployment rates and rates of violent crime, there was no longer a significant relation between rates of male unemployment and rates of violent crime. The figure of .053 would be able to explain less than 1% ($.053^2$ = .003 = 0.3%) of the differences in rates of violent crime. See Table 2.

Consequently, the argument that the unemployment of males is the more potent force in generating a social milieu that, in turn, is generating violent behavior is difficult to sustain. The argument that varying rates of violent crime are predictive of varying levels of out-of-wedlock births seems more consonant with the data.

Synopsis

Levels of out-of-wedlock births were consistently and strongly related to rates of violent crime. Neither index of privation – per capita income or male unemployment – was as predictive of rates of violent crime as were levels of out-of-wedlock births.

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Tier 2: Out-of-Wedlock Births and Violent Crime: a Generation Lag between the Two

Let's begin with the year 1976 and record the variation of the percentage of out-of-wedlock births across (available) states and D.C. (n = 39). Then let's add 20 years to 1976 to arrive at the year 1996. Approximately 30% of all arrests of males for violent crimes occur for males 20 years or younger (U.S. Dept. of Justice 1995). That is, males born out-of-wedlock in 1976 would be 20 years of age in 1996. Then let's correlate the percentage of out-of-wedlock births per state (& D.C.) in the interval *1976-1978* to the rate of violent crime per state in the interval *1996-1998*. The result is significant (r_p = .876; sd = .021; p < .001; n = 39). See Table 1. In addition, this figure of .876 is at least as high as the mean correlation between the percentages of out-of-wedlock births and rates of violent crime from the same interval of years (1996-1998); i.e. r_p = .800 (The difference of .076 is not significant unless a one-tailed test is used [t = 1.72;.p < .05, 1-tailed; df = 36]. In other words, rates of violent crime can be predicted at least as well by the knowledge of the percentage of infants who were born out-of-wedlock 20 years earlier. Of course, after 20 years, these infants are also no longer babies, but are perfectly capable of energetic, adult physical behaviors.

Tier 3: Out-of-Wedlock Births and Violent Crime Aggregate Data across Time:

Correlates to Violent Crime in the U.S. Across Time (1946 – 2000)

Taking the U.S. as a unit, from the fifty (available) years 1946 to 2000 (n = 50), the correlation between percentages of out-of-wedlock births and rates of violent crime was significant (r_p = .917; p < .001; n = 50). Over 80% ($.917^2$ = .841 = 84.1%) of the variability in rates of violent crime can be explained by differential rates of out-of-wedlock births. For the same time period, the correlation between rates of male unemployment and rates of violent crime was also significant (r_p = .501; p < .01; n = 38). The correlation between levels of out-of-wedlock births and rates of violent crime (.917) is larger than the correlation between rates of male unemployment and rates of violent crime (.501) (t = 8.159; p < .001; df = 47). Both of the indices remain significant when the other is partialled from the data (the correlation between levels of out-of-wedlock births and rates of

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violent crime – with rates of male unemployment partialled – is (r_p) .944; $p < .001$, df = 47, and the correlation between rates of male unemployment and rates of violent crime – with out-of-wedlock births partialled – is (r_p) .321; $p < .05$; df = 47).

The data suggest that the level of out-of-wedlock births is a superior predictor, over time, of rates of violent crime than is the rate of male unemployment (See Table 2).

Tier Four: Violence and Out-of-Wedlock Births: Homicide and Violent Behavior across Cultures

Arguably, this connection between unwed mothers and violent crime may be a(n) (epi)phenomenon that is highly specific to the U.S. mega-tribe, i.e. a quirk. That is, the found relationship between unwed mothers and violent crime may be unique to the United States in the last quarter of the 20th century. If the relationship is idiosyncratic to one country (the U.S.) and one time-frame (the final quarter of the 20th century), then generalization to other times and places would be problematic. On the other hand, the U.S. may simply be an example of a more general trend. To discover if the relationship between violent crime and births to unwed mothers was more unique to the U.S. or more exemplified a cultural theme, three similar analyses were conducted across cultures. The first such survey is restricted to Nordic countries. The additional two surveys are more universal and span the globe.

Nordic out-of-Wedlock Births and Levels of Assault

Percentages of out-of-wedlock births and rates of assault per 100,000 population 15 years or older (14 years for Norway) were available from Denmark, Finland, Norway and Sweden for the interval 1959-1990 (Nordic Statistical Secretariat 1960-1992). [Note that all of the nations did not have figures for all of the indices. Hence, the "n's vary slightly]. The correlations between percentage of births that were out-of-wedlock and assaults were significant for all four nations (Denmark (r_p = .970; $p < .001$; n = 23), Finland (r_p = .851; $p < .001$; n = 20), Norway (r_p = .973; $p < .001$; n = 23) and Sweden (r_p = .945; $p < .001$; n = 22).

It should be noted that all four countries are ethnically homogeneous and that all four countries have a gross domestic product per capita (GDP) at least twice the

average of all countries for which such statistics are available (Central Intelligence Agency 2000). Accordingly, neither ethnic

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antagonisms nor absolute levels of poverty would seem a likely variable in affecting the results.

If an interval of 19 years is used to separate the level of out-of-wedlock births (a prior event) and rates of assault (a subsequent event), the correlations are still significant (the correlations [r_p] range from .889 to .949; $p < .001$; n = 13).

Global Sample #1: Murder and Illegitimacy across Cultures

Cross-cultural analyses are hampered by the problems of meaningful and comparable units of analysis. (See Ford [1961] and Levinson & Malone [1980] for a discussion on cultural units). Analyses of rates of crime are often problematic because of the lack of consonance among countries in the definitions and reporting of various crimes. However, one crime – murder – does seem to be universally accepted as a crime with reasonably concordant definitions (Archer & Gartner, 1988; Daly & Wilson, 1988). One may muse upon the high validity of the level of death as a dependent variable. Accordingly, rates of murder in the U.S. (U.S. Bureau of the Census, 2001) were correlated with illegitimacy rates in the U.S. – across the 50 states plus D.C. – and then were compared to similar figures generated by cross-cultural data.[3] Note that the United Nations defines illegitimacy in the following manner.

> Legitimate refers to persons born of parents who were married at the time of birth in accordance with the laws of the country or area. Illegitimate refers to children of parents, who, according to national law, were not married at the time of birth, regardless of whether these children have been recognized of legitimized after birth. (United Nations, 1992)

The U.S.

In 2000, the relationship – across the 50 states plus D. C. – between murder rates and illegitimacy rates was significant (r_p = .776; $p < .001$). As illegitimacy rates increased, so did murder rates. Over half ($[.776]^2 = .602 = 60.2\%$) of the variance in murder rates can be attributed to differences in illegitimacy

[3] Relatively current indices of out-of-wedlock births for non-Europe are difficult to unearth within a single survey. Europe is well- (hence, over-) represented within single volumes (e.g. Coleman 1998, Eurostat Yearbook 2003). However, the sample examined here was, in the main, developed by individual nations via governmental reports. For the citations per nation, contact the first author.

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rates. **A test for a more direct causal link between fatherlessness and violent crime would involve a time lag of one generation. This test was conducted. The two time frames were 1980 and 2000, i.e. a generation apart.** The correlation (r_p) was .872 ($p < .001$; n = 51). Over three-quarters ($.872^2 = .761 = 76.1\%$) of the variance in the murder rates can be attributed to the variance in the percentage of out-of-wedlock births. The knowledge of out-of-wedlock births, i.e. fatherlessness, in 1980 ($r_p = .872$) was a superior marker ($t = 2.37$; $p < .05$; 2-tailed; df = 48) for 2000 levels of violent crime – in this instance murder – than that of the 2000 level of fatherlessness: ($r_p = .776$).

Cross-Cultural Data

In terms of any comparison of rates of crime between or among nations, INTERPOL (2004) offers the explicit caution:

> Warning: These statistics cannot be used as a basis for comparison between different countries. They do not take into account:
>
> * national differences in the legal definitions of punishable acts
>
> * the diversity of statistical methods used
>
> * changes which may occur during the reference period affecting the data collected.
>
> Police statistics reflect reported crimes, but this represents only a fraction of the real level. The volume of crimes not reported to the police may depend on the actions, policies and perceptions of the police. These can vary with time, as well as from country to country. Consequently, all statistical data published here should be interpreted with caution.

With this useful *caveat* in mind, and realizing the possible attendant elevation of false negatives, the following data are presented:

Out-of-wedlock births and homicide: concurrent time There were usable data for 60 countries in which both murder rates (per 100,000 population) (INTERPOL 2004) and illegitimacy rates (percent of [live] births that were illegitimate) were reported to the satisfaction of the various governmental agencies. The relationship was positive and significant ($r_p = .337$; $p < .01$; n = 60). Across cultures, as murder rates went up, so did the

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proportion of single-parent births. Approximately 10% ($.337^2$ = .114 = 11.4%) of the differences in murder rates could be attributed to differences in rates of illegitimacy.

Out-of-wedlock births and assault: concurrent time The relationship between out-of-wedlock births and the level of assault was not significant (r_p = .266, n.s., n = 52).

Out-of-wedlock births and violent crime: generation lag In 1986, the United Nations had a special demographic section on illegitimacy in the *Demographic Yearbook* (1986). Eighty-six of those surveyed nations were also surveyed by INTERPOL (2004), circa 2002, for homicide. For the 86-nation sample, the relationship between the level of out-of-wedlock births circa 1984 (United Nations) and the level was significant (r_p = .380; $p < .001$; n = 86). Seventy-five of the surveyed nations also were surveyed by INTERPOL, circa 2002, for assault. In the 75-nation sample, the relationship between the level of out-of-wedlock births, circa 1984, and assault, circa 2002, was also significant (r_p = .240; $p < .01$, n = 75).

Index of privation to violent crime: concurrent time An index of privation – per capita income (CIA 2002) – was related to homicide only if the level of significance is .05; 1-tailed (r_p = –.184; $p < .05$; 1-tailed; n = 129). Per capita income was not related to level of assault (r_p = .139, n.s. n = 129).

Tier Five: Level of HIV Infection in Women and Rates of Homicide and Rates of Assault (by Nation)

Although the above relationships did indicate a relationship between fatherlessness through out-of-wedlock births and rates of violent crime, the out-of-wedlock data are somewhat incomplete, in that virtually all of sub-Saharan Africa is excluded. Such data are not available or are not easily to be found. Accordingly, an index was sought that was reasonably harmonious with the hypothesis being tested and was coded for nations in sub-Saharan Africa as well as in the other regions of the globe.

The most promising index, even if far from ideal or even of obvious validity, was the percent of the adult women (15 – 49 years) of the total population of women who were HIV positive. The number of women HIV positive was recorded by the World Health Organization (World Health Organization 2002). This number was then divided by the number of women in the

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country (CIA 2003) to develop the percentage of those women who were HIV positive. The argument can be made that the majority of women in sub-Saharan Africa who are HIV positive either had multiple sexual partners or their partners had multiple sexual partners. Accordingly, the level of HIV in women in a population may indicate the diminution of the presence of social fathers. Certainly such numbers would be a marker for extra-marital sexual partnerships. It is important to note that the number of sexual partners is the best (current) predictor on the chances of having a sexually transmitted disease (Allen et al. 1992; Aral, Mosher & Cates, 1990; Brunham & Plummer, 1990; Hunter et al., 1994; Laumann et al., 1997; Laumann & Michael, 2001; Moore & Cates, 1990; Newell et al., 1993; Thrall, Antonovics & Bever, 1997; Westrom & Mardh, 1990): the greater the number of partners, the greater the chance for an infection. It should also be noted that there is an asymmetry in the rate of transmission between the sexes. The rate of transmission from male to female is greater than the rate from female to male. Although the males are relatively less likely to become infected, once infected, they are contagious and able to infect additional partners. Thirty-one Sub-Saharan nations had data that indicated the percent of the female population who were HIV positive.

Across the resultant 100-nation sample, the percent of female population that was HIV positive and the level of homicide was significant ($r_p = .445$, $p < .001$; $n = 100$). The percent of female population that is HIV positive and the level of assault was also significant ($r_p = .393$, $p < .001$; $n = 92$). See Table 3.

Synopsis: Violent crime and out-of-wedlock births across nations

Two caveats and qualifications should to be noted in regard to cross-cultural comparisons. To wit:

> (1) Problems in the reporting of (violent) crime are legion, and
>
> (2) As INTERPOL admonishes, if the focus is cross-cultural, then the "legionary" problems in the reporting of (violent) crime are intensified, probably more so for assault than for homicide.

On the other hand, given the very real existence of the two *caveats*, the above sources of error variance would tend to lessen

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or to lower, if not submerge, any index of association that was being computed. But, in spite of large amounts of noise in the system, significance was still reached and, thereby, suggests that the relationship between violent crime and rates of illegitimacy is more real than merely apparent. That is, independent of locale, if fathers are systematically precluded from the mother-child dyad, then violent crime within their community, as indexed by murder rates and rates of assault, is expected to be under pressure to increase.

An Argument for Causality

While causation is primarily a philosophical concept and quite immune from proof, the argument can certainly be made that father presence tamps down – causally – violent behavioral tendencies in their sons who have grown to adulthood. Although correlations from the same time-frame between violent crime and fatherlessness may leave room for legitimate debate on correlation versus causality, the successful prediction of violent crime rates by indices of fatherlessness a generation earlier presents a different order of rigor. This successful prediction, across a generation, occurred in the U.S., plus in all four Nordic countries that were surveyed, as well as in the 75 national cross-cultural sample.

In any litany of evidence that tries to convince an audience of causation, a time factor is necessary, albeit not sufficient. If "A" causes "B", then "A" must occur before "B". (See Russell [1945] and Kant [1963] for classic discussions.) And such is the case being presented here. The incidences of fatherlessness occurred twenty years before the incidences of violent crime. It is useful to note that part of the argument being made here is that father absence is neither a necessary nor a sufficient pre-condition for their son's violent behavior. Father absence is best conceptualized as being a contributory causal variable (see Susser [1973] and Kenny [1979] for discussion). And, as has been widely presented and discussed, a large number of additional variables have been aligned with both violent crime and out-of-wedlock births.[4] However, it is useful to note that if

[4] An alternative reason – a logical category, if not an empirically validated category – would entail a genetic bias. That is, out-of-wedlock births could be disproportionately sired by men who were (more) prone to violent behaviors. The tendency toward violence, arguably genetically influenced, would then be passed

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the impact of fatherlessness is removed, any found relationship between male unemployment or per capita income and violent crime dissipates rather completely. It is also useful to repeat that there was no indication that a lowered per capita income was associated with an increase in violent crime. Accordingly, to the extent that male unemployment and per capita income signify poverty, poverty was not shown to be a thematic variable generating both fatherlessness and violent crime. Of course, complementary variables may prove to be more predictive.

Freud and the Oedipus Complex

In what is unusual for the behavioral sciences, a coherent set of empirical data exists, but a synthesizing theory is not yet available. Framed differently, the question emerges: "Why?" why would an absence of something – in this case, an on-going social father – be able to influence anything – in this case, his son's level of adult violence. At first blush, the idea seems counterintuitive. However, at a deeper hue, there may be some rationale for the relationship.

Without drawing too fine a point, Freud's theoretical construction of the *Oedipus Complex* (Freud, 1961) may have preceded the rigor of Pearson's product moment correlation coefficients; even though, as has been well documented, a problem with (any) Freudian analyses is the lack of falsifiability of his conclusions/hypotheses (see Popper [1959, 1962] for discussion on the values of falsifiability).[5]

This paper has no comment at all upon sexuality vis-a-vis Oedipus's mother (Jocasta) or anyone else's mother. This paper does focus on the relationship between a young boy and his on-going social father.

Freud's age bracket for the onset/completion of the *Oedipus*

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from the genitor to the (out-of-wedlock) son. Such tendencies would be manifested at a higher proportion in out-of-wedlock sons when compared to sons born within wedlock. See Mednick, Gabrielli & Hutchings (1984) for empirical data supporting such a dynamic for property crime (only); but not for violent crime. See Rowe (1994), Loehlin & Rowe (1992) and Scarr & McCartney (1983) for theoretical bases consonant with the putative dynamic. See Bohman & von Knorring (1979), Bohman & Sigvardsson (1990) and Bohman, Sigvardsson & Coloniger (1981) for empirical data from the (loosely) analogous situations of 'social problems," e.g. alcoholism.

[5] Freud seemed pleased with his discovery and deemed it important. He wrote: "I venture to assert that if psycho-analysis could boast of no other achievement than the discovery of the repressed Oedipus complex, that alone would give it a claim to be counted among the precious new acquisitions of mankind" (Freud, 1949).

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Complex is 3 to 5 years. Such a bracket (i) seems imminently accessible to be tested in relationship to father presence and to sons' violent behavior, either to be substantiated or rejected, and (ii) does mesh well with the demographic data on the timing of when divorced fathers are separated from their children.

Two points are germane here. First, children, which certainly includes the taxon "sons," do tend to become bonded to their fathers. Second, fathers are much larger in size, and much more powerful than their young sons. Conversely, the young sons are much smaller and weaker than their fathers. These two points almost seem to define the concept of ambivalence. Namely, the child loves the larger man, but the larger man can and does physically control the world of the small child. This ambivalence, it is suggested here, is the crucible for the young boy becoming imprinted to the idea of obeying authority and thereby learning to obey himself. The large man whom the child loves is the same man who inhibits the child. It is suggested that his inhibition becomes internalized and becomes a permanent part of the child's psyche and the child-grown-to-adulthood's psyche. For classic discussions on imprinting, see Lorenz (1935), Hess (1973), Tinbergen (1951, 1965). For slightly more current examples, see Bolhuis & Horn (1992), Bornstein (1989), Bower (1993), Cook (1993), Freedman & Gorman (1993), Leland (1994), cf Rossi & Rossi (1990).

In other words, the child is inhibited from unrestrained behavior. He is imprinted to constrain his own behavior, i.e. he develops a "conscience." The behavior in question here is violent behavior. Such violent behavior is almost universally counter-productive within the family. And it is within the family that the child and the father will and do interact. If the early restraints by the father or father-figure upon the young son are precluded, then there is no effective substitute to create both (i) the ambivalence and (ii) the subsequent inhibition, i.e. "conscience," which would preclude violent behavior.

This paper is perfectly willing to let others debate the relationship between aggression and sexuality. The data presented here do point in the direction that the early absence of fathers foreshadows an increased level of violent behavior on the part of their sons-grown-to-adulthood, or, on the other side

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of the coin, the on-going presence of fathers attenuates violent behavior on the part of their sons-grown-to-adulthood. The father's presence is viewed as a contributory causal agent and is not merely reflective of a correlation. The specific dynamics of how the presence of an on-going social father translates to reduced levels of violent behavior in his (grown) sons is well beyond the scope and ken of this exercise; and, indeed, such a synthesis of the empirical data with a theory is, even yet, over the horizon. The data are available, and, for the behavioral sciences, are fairly unambiguous. What is needed is a theory that both explains and predicts the patterned data in a cogent and parsimonious manner. Freud may have pointed in the right direction, but the rest of the route is uncharted.

There is a very broad swathe of academia which sees the social father as either supernumerary or optional or irrelevant. The authors challenge that view.

Conclusion

It is well beyond the scope of this survey to be able to isolate which mechanisms and what levels of potency per mechanism are instrumental in driving the data that have been presented. Nonetheless, it is argued here that the on-going presence of a father with his son will reduce the level or incidence of violent behavior emitted by the son who has grown to adulthood. The association is argued to be causal in character, not merely correlative. Hence, social dynamics and attitudes that maximize father presence with their sons should result in long-term prevention or reductions in violent behaviors by those sons. Although the precise mechanisms by which the presence of a father influences the psychological and motivational hierarchy or conscience of the developing son are currently unknown, these putative mechanisms that tamp down the violent behavior seem a very important field of inquiry for developmental psychologists and family researchers as well as for public health professionals.

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APPENDIX

Divorce rates – a separation of a father from his children – are not predictive of violent crime rates. The correlations (r_p) ranged from .003 to .141 (all not significant). Therefore, it appears that there are two different profiles concerning the two main reasons for fatherlessness: divorce and out-of-wedlock births. The preclusion of a father – out-of-wedlock births – and the separation of a father from his children – divorce – represent distinct phenomena. Framed a little differently, father preclusion is correlated with unwanted social behaviors (any specific causal profile of the correlations is beyond the scope of this inquiry). However, no evidence of an association was found between father separation and the unwanted social behaviors. Below is a suggestion which profiles one reason for the distinction:

Fathers and their Children's Early Experiences

With very few exceptions, fathers – as co-resident parents – are not available to their children when their children are born out-of-wedlock. In a divorce situation, again with very few exceptions, the father had shared a home with his child for some interval of time, then – after the divorce – the father was unavailable to reside with his child. The context of divorce statistics is interesting.

The Divorce: Age of Father and Age of Offspring

The median age of divorce for husbands has been between the age of 32 and 36 years since 1970 (U.S. Bureau of the Census, 1989). The average number of children per divorce that involved one or more children is approximately 1.7 (U.S. Bureau of the Census, 1996). Thus, men involved in divorce more tend to be middle-aged rather than teenagers and sundered families that involved at least one child, often have more than one child.

National data on the age of the child at the time of divorce are difficult to locate. However Morgan, Lye and Condran (1988), using the Current Population Survey data, did survey over 90,000 children from divorced families and coded by age of child. The following patterns were revealed for sons (and daughters) involved in a divorce situation.

From families with one son and no daughters, 34.7% of the divorces occurred when the son was one-year old, 23.2% occurred when the son was two years old, and 42.1% of the divorces occurred when the son was three years of age or older. Framed differently,

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42.1% of the sons lived with a social father for at least the first three years of their lives. For families with two sons and no daughters, 91.7% of the divorces occurred after the first-born son was three years of age or older. For families with one daughter and one son only, 92.1% of the divorces occurred when the first born was three years or older. If approximately half of these first-born were sons, then approximately 46% of the sons lived with their social fathers for at least their first three years of life. These early years are generally agreed to be important in the child's developing psychosocial maturation.

Thus, a key distinction between children-of-divorce and children-of-out-of-wedlock births is that the former tend to have more early contact with the father.

Post-Divorce Father-Child Contact

Across virtually all categories of divorce, women dominate in the petitioning for divorce (National Center for Health Statistics, 1989, 1996; see Chadwick & Heaton [1992] for discussion). (See the Beijing Review [1995], Buckle et al. [1995], Dennis [1992], Hong & Ning [1992], Peters [1979], and Sullivan & Allen]1996] for similar data from Non-U.S. samples). If children (1 or more) are involved in the U.S. divorce situation, then the women dominate in petitioning by more than a two to one ratio. The range is from 2.3 – 2.4 as a function of the number of children. And this is not to be wholly explained by any chivalrous tendency for the man to allow the woman to file for the divorce, although this may happen where the desire for divorse is mutual, it is the female who most often seeks divorce.

With exceptions, contact between non-custodial fathers and their children is generally low and is consistently lessened over time (Furstenberg et al., 1983, Furstenberg et al., 1987, Seltzer, 1991, and Dudley, 1991). The non-custodial parent is not legally guaranteed access to the child's home. Hence, visitation rights really means that the child can visit the non-custodial parent only when the visit is away from the child's home.

When minor children are involved in a divorce situation, mothers/wives dominate divorce petitioning by more than a 2 to 1 ratio (Mackey 1996, National Center for Health Statistics 1996). It is useful to note that most women who petition for divorce tend to do so for psychological reasons rather than to escape physical or economic peril (Braver 1998, Burns 1984, Cleek & Pearson 1985, Gigy & Kelly 1992, Greif & Pabst 1988, Mao, 2000; Thurnher, Fenn, Melichar, & Chiribota 1983). Men, especially men who are fathers

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of minor children, are much less prone to petition for divorce than are women. When the men do petition for divorce, they are much more prone to specify (the wives') adultery as the reason for their petitioning (Sullivan & Allen 1996, Buckle & Gallup 1996). See Betzig (1989) for cross-cultural data. Married men are quite averse to being cuckolded. Accordingly, a cohort of single mothers is being created as a function of the mothers' choices. These single mothers have reduced chances of marrying (Aquilino 1996, Bennet, Bloom & Miller 1995) and thereby enter into a category wherein multiple sexual relationships are more prone to occur (Michaels, Gagnon, Laumann & Kolata 1994). At the same time, these data suggest that fathers typically do not voluntarily relinquish residing with their own children. There is no evidence that supports the thesis that the separation of these fathers from their children is due to the lack of a father-to-child affiliative bond.

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Table 1

Relationships (mean r_P, sd) between violent crime, and the two social indices (i) out-of-wedlock births, and (ii) privation (rates of male unemployment and per capita income)(n = 51 unless otherwise noted).

Years of social index	Years of violent crime	Social index	Correlation (s.d.)
1996 – 1998	1996 – 1998	Out-of-wedlock births	.800 ** (.034)
1976 – 1978	1996 – 1998	Out-of-wedlock births	.876 ** (.021)[a]
1996 – 1998	1996 – 1998	Rates of maleb unemployment	.414 * (.096)
1996 – 1998	1996 – 1998	Per capita income	.383 * (.041)

[a] n = 38;

[b] unemployment rates for males and females combined for the year 1997

* p < .01; ** p < .001

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Table 2

Correlations (i) between percentage of children born out-of-wedlock and rates of violent crime, (ii) between rates of male unemployment and rates of violent crime and (iii) partialled correlations [a] between percentage of children born out-of-wedlock and rates of violent crime (with male unemployment rates partialled) and [b] between violent crime rates (with out-of-wedlock births partialled) for the years 1996-1998 (U.S. Bureau of the Census 1996-2000).

Correlated social indices	Correlations
Mean correlation between out-of-wedlock births and rates of violent crime	.800 **
(Correlation with rates of male unemployment partialled)	.753**
(Correlation with per capita income partialled)	.810 **
Mean correlation between rates of male unemployment & rates of violent crime	.414 *
(Correlations with out-of-wedlock births partialled)	.053 n.s.

* $p < .01$, ** $p < .001$

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Table 3

Relationships, across nations, of the social indices (i) out-of-wedlock births and (ii) per capita income with (iii) levels of homicide and (iv) with levels of assault.

Social index	Homicide (n)	Assault (n)
Out-of-wedlock births (concurrent time interval)	.337 ** (60)	.266 n.s. (52)
Out-of-wedlock births (generation lag)	.380 *** (86) .	240 * (75)
Percent of female population HIV positive (concurrent time level)	.445 *** (100)	..393 *** (92)
Per capita income (concurrent time interval)	– .184 † (141)	.139 n.s. (129)

†p < .05; 1-tailed; * p < .05; 2-tailed; ** p < .01; *** p < .001

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Jewish Migrations from Germany to Poland: the Rhineland Hypothesis Revisited

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By the sixteenth century there was already a substantial Ashkenazi population residing in eastern Europe which spoke Yiddish and followed Jewish rituals modeled on those of the Jewish population of Germany. It has consequently been assumed by many historians that eastern European Jewry originated in a migration of Jews from Germany prior to that century fleeing the pograms of the First Crusade, the pestilence of the Black Death, or the expulsions of the fifteenth century. The author examines the historical evidence for such migrations but concludes that no major migration to Poland appears to have taken place as a result of these three events.

Key Words: Ashkenazi; Yiddish; First Crusade; Black Death; Fifteenth Century expulsions of Jews; Medieval Germany; Poland.

Introduction

An important question that has not yet received an adequate and definite answer is: where did the Ashkenazi Jews who settled eastern Europe come from? Ashkenazi Jews are European Jews, particularly from West, Central and eastern Europe. The Jews in the United States are mainly Ashkenazi Jews from eastern Europe. Before World War II, the Jews living in Poland, Russia and other east European countries accounted for more than 90 per cent of the Ashkenazi Jews.

Over the last 100 years most Jewish historians have favored the opinion that German Jews, and especially those from the Rhineland, were the source of east European Jewry. Because of the prominent role played by the Rhineland Jews, one speaks of the Rhineland hypothesis. To give the Rhineland hypothesis a solid basis the historians point to the three major pogroms that hit German Jewry: the First Crusade (1096), the Plague (1348/49) and especially the expulsions in the fifteenth century (Mahler 1946, p. 22; Mark 1957, p. 190; Vetulani 1962; Weinryb 1972, p. 29; Ankori 1979, p. 36). The consequence of this opinion is that substantial migrations must have taken place

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from Germany to Poland during the course of these events.

The Rhineland hypothesis also pertains to the origin of the Yiddish language. Many linguists are of the opinion that Yiddish originated in the western part of Germany and that it was brought to Poland by the Jews who were expelled from Germany during the various pogroms (Van Raad and Voorwinden 1973, pp. 57-58; Weinreich 1980, p. 340; Keller 1986, p. 336; Stedje 1999, p. 106). The following three issues are inextricably bound up with this hypothesis:

a. a sizeable migrations of German Jews from Germany to Poland as a result of the pogroms during the crusades and the Plague, and the expulsions from German cities during the fifteenth century,

b. a relatively low number of Jews in Poland in 1500 resulting from these migrations (Baron 1957, v. 16 p. 4; Weinryb 1972, p. 32), and

c. the Rhineland as the place of origin of the Yiddish language that was brought to Poland by the Jews who had fled during the pogroms.

If there is evidence for the above-mentioned migrations, it certainly should appear in *Germania Judaica* (1934-1995), presently the most reliable reference work on Jews in German-speaking regions. So far, three volumes have been published each volume covering a specific period between the fourth and the beginning of the sixteenth century. In each volume the places in the German-speaking regions where Jews lived are discussed in alphabetical order. For each place the history of the Jewish inhabitants is described using archival sources. It is like an encyclopedia that contains all the places in the German-speaking regions where Jews were living.

This study was undertaken to find out what evidence is available to show that the aforementioned mass migrations from Germany to Poland indeed took place, since not all (Jewish) historians agree on their occurrence. It is obvious that *Germania Judaica* should play a central role in this study, and it will be shown that it contains no evidence that the above-mentioned mass migrations took place.

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Results

The Crusades

Although there were three crusades, the emphasis will be on the First Crusade of 1096, since the Second (1146) and the Third (1188) Crusades hardly caused any Jewish casualties.

Until the Crusades, the Jews in Germany were treated more or less the same way as the rest of the citizens (Stobbe 1866; p. 8). But in 1096 widespread pogroms were started by the crusaders. It is not clear how many Jews were killed: the number varies from about 2,000 to 12,000. Aronius (1902; nr. 176) considers 4,000 would be the maximum figure, and regards estimates of 12,000 as being much too high.

The *Jewish Encyclopedia* (1905, v. 10, p. 563) states that the first extensive Jewish emigration from western Europe to Poland occurred at the time of the First Crusade (1098) [sic].

Both Caro (1908, p. 206-207) and Graetz (1909, v. 6, p. 85) indicate that the pogrom was worse in Germany than in any other country. The crusaders first came to Trier, where they killed a number of Jews while others saved themselves by accepting baptism. The Jews fared better in Speyer, where at the most only eleven were killed. The rest were given refuge in the palace of the bishop and the castle of the Emperor, where they were protected. Next the Jewish communities of Worms and Mainz were attacked, 800 being killed in Worms and more than 1000 in Mainz. In Cologne, except for two, the Jews were given shelter in the Bishop's Palace and in various citizen's houses and the Bishop allowed them to escape to villages outside Cologne that belonged to him. However the crusaders discovered where the Jews were hiding and killed many of them.

Almost everywhere the Jews were given the choice of avoiding death by accepting baptism, and those who accepted baptism were able to return to their old religion relatively soon. In the spring of 1097, less than a year after the crusade, the Emperor Henry IV allowed the baptized Jews to live according to Jewish law, and the Jewish communities were able to come to life once more.

Caro states that the Jewish communities continued to exist in all the places where they were to be found before the crusade (Caro 1908, p. 230), while Feist (1925) says nothing about a possible movement of Jews towards Poland in 1096.

In 1926 S. Dubnow, the famous Jewish historian, wrote in

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Weltgeschichte des jüdischen Volkes (p. 427) that:

> the First Crusade that carried the Christian masses to the Asiatic East, simultaneously drove the Jewish masses into eastern Europe [my translation].

However, on the next page he writes, and I will first give the German version:

> Über den Verlauf der für die jüdische Geschichte so bedeutsamen Emigrationsbewegung besitzen wir keine näheren Nachrichten, doch wissen wir aus den Notizen mancher damaliger Rabbiner und Reisenden, dass jüdische Kaufleute aus Deutschland nicht selten den Weg ... einzuschlagen pflegten.
>
> We have no further information about the course of the emigration, which is so important for Jewish history, but through notes from a number of rabbis and travellers from that period we know that Jewish merchants quite often took the road to Slavic countries like Poland and Russia [my translation].

When I was preparing this article, it seemed to me rather inefficient to translate the German text when there is an English version as well. When I located the English version, I made a rather strange discovery. Assuming that the German version was correct, it seemed that the English version by Moshe Spiegel had been changed with respect to content. It reads as follows:

> There are direct reports about the course of that migration: some rabbis and travellers of that time refer to the fact that Jewish merchants from Germany journeyed to ... (Dubnow 1968, v. 2, p. 790).

In view of the controversy regarding the extent of this mass migration, this is a remarkable change/mistake, especially as there is no note specifying any of these direct reports. The German version (and also the Yiddish version, not quoted here) agrees with the original Russian text.

Mark states that during the First Crusade a mass migration of German Jews took place towards Poland. However, he also suggests that some of them may have returned to Germany (Mark 1957, p. 190).

According to Vetulani (1962) Jews began to arrive in Poland

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from southern and western Europe by the end of the eleventh century as a result of the pogroms in their countries of origin.

Prawer (1972, p. 19-20), who briefly describes the atrocities committed during the crusades of 1096 and 1146, does not say a word about Jews fleeing towards Poland.

Similarly Toch (1997) concludes that after 1096 the Jews returned to the places where they had been persecuted before.

In order to decide what really happened during the crusades we have to rely on *Germania Judaica* volume I (Elbogen et al. 1934). The following list shows the information available.

Aschaffenburg	2nd Crusade: caused great sorrow to the inhabitants (p. 14).
Bacharach	2nd Crusade: three Jews with their families fled to the castle of Stahleck. When they left the castle to conduct their business they were killed by the crusaders (p. 17).
Bonn	1st Crusade: Jews fled to Altenahr or Eller (p. 47).
Boppard	1196: Crusaders killed eight Jews (p. 61).
Cologne	1st Crusade: the Jews fled to seven villages around Cologne where they were protected by the archbishop. In the end they were killed by the crusaders after all (p. 70).
Geldern	1st crusade: is one of the seven villages around Cologne (p. 114).
Halle	1st Crusade: six Jews died in fights with the crusaders. The rest of the community went to a place opposite Halle (Merseburg?) (pp. 125, 227).
Mainz	1st Crusade: about 1000 Jews killed, comprising the largest part of the community.
	3rd Crusade: According to Eleasar ben Yehuda of Worms, on 2 February, he and most of the Jewish community of Mainz fled to the fortified city of Münzenberg when the movement of the crusaders started. On 26 April they returned to Mainz (pp. 180-181).
Mehr	1st Crusade: some Jews were killed, some forcibly baptized (p. 224).

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Neuss	1st Crusade: probably 200 Jews killed (p. 243).
Nuremberg	2nd Crusade: Jews from the surrounding places fled to the city (p. 249).
Prague/Bohemia	1st Crusade: some Jews killed, others forcibly baptized (p. 270).
Regensburg	1st Crusade: all were forcibly baptized, but in 1097 they returned to their own religion (p. 286).
Rüdesheim	1st Crusade: 53 or 60 persons and a certain Rabbi Kalonymos, originally from Mainz, were killed (p. 313).
Speyer	1st Crusade: eleven Jews killed (p. 330).
	2nd Crusade: one woman killed (p. 331).
	3rd Crusade: according to the above-mentioned Eleasar ben Yehuda, the Jews of Speyer had to leave the city and fled to fortified towns (p. 371).
Strassburg	3rd Crusade: idem for Strassburg (ibid.).
Trier	1st Crusade: partly killed, partly forcibly baptized (p. 377).
	2nd Crusade: one person killed (ibid.).
Wevelinghofen	1st Crusade: This was one of the seven places around Cologne where the Jews were sent for refuge by the archbishop (pp. 395-396).
Worms	1st Crusade: 800 Jews killed, and an unknown number forcibly baptized (p. 441).
	2nd Crusade: Jews fled to fortified castles; one killed (ibid.).
Xanten	1st Crusade: one of the seven places around Cologne mentioned before (p. 497).

Jews fleeing to Poland are mentioned nowhere. In cases where something is known about the destination of the fleeing Jews, it appears that they remained in the neighbourhood. Therefore, there is no evidence that the initial impetus to the forming of the large east European Jewry was the result of mass migrations during the Crusade of 1096 from Germany in

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general and from the Rhineland in particular.

The Plague

Virtually the whole of Europe suffered from the Plague in the fourteenth century. The epidemic first spread from southern France to the bordering Spanish provinces and then to the rest of Europe. In 1348 the Jews were confronted with a serious accusation: they supposedly had poisoned the wells which in turn was alleged to have caused the Plague which became known as the Black Death. The accusation resulted in terrible pogroms.

According to statements by contemporaneous historians, there would have been hardly any Jews left in Germany after the Plague (Kutschera 1910, p. 235). Many refugees and exiles started a new life in Austria, Bohemia and in the bordering provinces of Poland (Dubnow 1969, v. 3, p. 263). According to Feist (1925, p. 130), all the Jewish communities of central Germany, southern Germany and Silesia were destroyed and few Jews remained. However, a little further on, he states that it is not true that during the Middle Ages all Jews were expelled from central Germany. Although the Jews in the Rhineland were hit by numerous pogroms, in some other communities, like Frankfurt, the Jews did not suffer much. Dietz shows that in his time there were 29 Jewish families who could trace their family tree in Frankfurt to before 1400, while the family tree of four of these families even went back to before 1350 (Dietz 1907, pp. 343-344). Between 1350 and 1370 again, small groups of Jews returned to Augsburg, Nuremberg, Cologne, Strasbourg and other cities (Dubnow 1969, v. 3, p. 263). Walcher (1852, p. 5) reports that in 1350, a tax book of the city of Stuttgart mentions a street in which Jews lived; also mentioned is a small yearly levy they had to pay to the city for a couple of buildings, including a Jewish school. In 1382 King Wenzel gave an *enfeoffment* (*Lehnsbrief*) to Margrave Bernhard I of Baden with the express right to protect Jews and to allow them to settle in his territory (Zehnter 1896).

According to Feist, Dubnow and Baron, a large number of those who escaped the persecutions fled to the east and found refuge in the Kingdom of Poland. This idea can also be found in the more recent literature. For example Motulsky (1995) states that Ashkenazi Jews, whose ancestors originally came from

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Palestine, migrated to the Rhineland in the ninth century, and that in the fourteenth century they moved to Poland.

But none of the above-mentioned authors provides any evidence or documentation for the claim that Jews migrated from Germany to Poland. Graetz does not even mention Poland (Graetz 1909, v.7, pp. 331-348).

Again we will have to turn to *Germania Judaica*, in this case Volume II (Avneri 1968), for evidence concerning the extent of migration of German Jews to Poland during the Plague. Volume II covers the period between 1238 and the mid-fourteenth century. The last but one sentence of the Introduction reads as follows: "survivors found refuge in Neumark and Poland; after a while, others were again taken on in the cities that had committed murder of the Jews, under essentially worse circumstances than before the Plague" [p. XXXIX; my translation].

I accordingly divided all the German places mentioned in Volume II of *Germania Judaica* in which it was certain that Jews were living, into the following three categories:

- Places where no pogrom took place as a result of the Plague (12).
- Places where Jews were killed and/or expelled (350); When it was stated, I also noted the place to which the survivors migrated.
- Places without information about the Plague or places where it is not clear what happened during the Plague (360).

Contrary to what Avneri writes in the Introduction, there is no evidence whatsoever that Jews fled from Germany to Poland during the Plague. When anything is known at all, it appears that, again, the Jews mainly fled or moved to somewhere else in Germany or to another German-speaking region. Poland is mentioned nowhere (except in the Introduction). An extra reason to assume that few if any Jews went to Poland is the fact that within a relatively short time Jews are once again to be found living in more than one third of the affected places. Where did these Jews come from? Back from Poland? In that case they certainly did not contribute to the formation of Polish Jewry.

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Expulsions During the Fifteenth Century

Mahler (1946, pp. 26-27) states that the persecution of the Jews in Germany reached its height in the fifteenth century, stating that shortly after 1400 the Jews were expelled from the Rhineland, halfway through the century they were expelled from southern Germany, and toward the end of the century from the remaining German cities, as well as from Austria, Silesia, Bohemia and Hungary. He alleges that all these Jews went to the Polish Lithuanian Commonwealth, as the Polish economy had an urgent need for merchants and craftsmen.

Writing about a fifteenth century migration of Jews to Poland, Weinryb takes the view that there were probably no more than twenty-five to fifty thousand Jews living in the whole of Germany at the beginning of the fifteenth century, but that sizeable groups of Jews were apparently streaming into Poland from Austria and Bohemia, as well as from Germany (1972, pp. 29-30). He refers to more than 20 cities and regions (mostly in Germany), which suggests that he thought that the Jewish migration to Poland took place from these cities and regions. But he admits that the evidence for a substantial migration is almost purely indirect, referring to a number of documents in which permission by Polish rulers is granted to small numbers of German Jews to enter and live in Poland. In addition, an increasing number of people appear in Poland using German place names as surnames.

Toch (1997) believes that at the beginning of the fifteenth century, some places in Germany had as many Jews as immediately before the Plague, although others had less. He states that during the notorious expulsions of the fifteenth century, the Jews left the bigger cities but settled in nearby villages. According to him, there was a pre-emptive migration which led to a situation that was characteristic of the sixteenth century: the Jews took up residence in villages close to major cities for which they were unable to obtain a residence permit, in order to be able to enter the cities in the daytime to carry on their trade. Therefore, as of the fifteenth century, residence in the country became common for German Jews.

Initially it seemed to me to be a good idea to check the places mentioned by Weinryb, but in the end I chose a broader approach, using *Germania Judaica* Volume III 1350 - 1519, Part One (Maimon 1987). The first part contains all places from A

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through L, and I categorized these (excluding the Dutch and Belgian ones) in the following way:

- Places from which Jews were expelled, with destination where possible (169),
- Places from which Jews were not expelled (14),
- Places about which it says nothing is known about an expulsion, or about which no mention is made of any expulsion (307),
- Places about which it is unclear whether there were any Jews in the fifteenth century (18).

It can be stated with certainty that the Jews were expelled from only one third of the places where they lived during that time. I will cite information about the German towns that Weinryb mentions as examples, plus some additional towns. The dates of expulsion are given in parenthesis.

Augsburg (1438, 1440): The expelled Jews went to Günzburg, Bamberg, Frankfurt am Main, Mainz, Nördlingen, Rothenburg/Tauber and Ulm (p. 49).

Bamberg (1475): many left the town voluntarily; some stayed until at least 1485 in the hope soon to be allowed lawfully to remain (pp. 76-77).

Erfurt (1453): the Erfurt Jews settled in Hochheim and Daberstadt, two villages near Erfurt (p. 316).

Freiburg (1401): no destination known (p. 397).

Glogau (1484): no destination known (p. 441).

Graz (1438, 1496): this is an Austrian town. One Jew expelled in 1438 went to Pressburg, Hungary, two others went to Wiener Neustadt, Austria. Some of the expelled in 1496 left for Eisenstadt, Hungary (p. 464).

Heilbronn (1471-1476): not mentioned by Weinryb: Most of the expelled Jews went to smaller neighbouring towns and villages, especially Neckarsulm and Sontheim. Others went to Massenbach and other places. One Jew went to Speyer, and later to Nördlingen, Schweinfurt, Ulm and Worms (p. 536).

Magdeburg (1493): one of the expelled possibly went to Braunschweig (p. 778).

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Mainz (1438, 1462, 1470): the first date mentioned is 1438. In 1445 the Jews were again allowed to live in the city. In 1462 not only the Jews but also some non-Jews were thrown out of the city following the capture of the city by Adolf II of Nassau. In 1463 the Jews were allowed back, but in 1470 they were again expelled. No destinations are given (pp. 805-806).

Mecklenburg (1492): not mentioned in *Germania Judaica.*

Meissen (1411): no expulsion is mentioned in *Germania Judaica.*

Nuremberg (1499): most of the expelled, 10 families, about 60 persons, went to Frankfurt am Main. Others went to Neustadt/Aisch and Hüttenbach, and some also ended up in Turkey anDd the Slavic East. The expression Slavic East is not further explained (pp. 1022-1023).

Salzburg (1498): this is an Austrian town. One of the expelled went to Regensburg (p. 1291). According to note 81 (p. 1295), the destinations Hungary, Poland and Turkey, conjectured by Altmann are not mentioned in any source (p. 1291).

Ulm (1499): the expelled moved to Bonn, Günzburg, Pappenheim, Mutzenhausen and Worms (pp. 1507-1508).

Würtemberg (1498): not mentioned in *Germania Judaica.*

Würtzburg (1450, 1489): in 1450 at least 18 families left the city or planned to do so.

As a last example of a German city, in 1423/24 the Jews were expelled from Cologne. Quite a number left for Deutz (on the other side of the river!), many went to Siegburg, Mühlheim am Rhein, Frankfurt am Main, Speyer and, as it seems, also to Salzburg. Later we find one Jew in Poland with a name that refers to Cologne: in 1521 Abraham ben Jechiel (from Cologne) died in Lemberg. In Lemberg German was spoken.

Cologne is not just given as an example, because it is the only German place in connection with which Poland is mentioned. In the Town Hall of Cologne, a very nicely decorated Gothic key was found, connected to a wooden hanger by way of a leather strap (Wirtler and Kapser 2000, p. 460). On one side of the hanger, dated 1427, three years after the expulsion, there is a Hebrew inscription, saying that it belonged to the Schaf family; on the other side there is an inscription in

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German, saying "up der burger huis" meaning "in the Town Hall". The key cannot have been confiscated during the expulsion, because the date is too late. Furthermore, if the Schaf family possessed a box in the Town Hall in 1427, they must have been living in the neighbourhood (they indeed lived in Deutz). What use would a Hebrew inscription have in 1427, if there were no Jews living there? This means that after the expulsion, people who were able to read Hebrew, i.e. Jews, still had ties with the city of Cologne. One might go one step further and conclude that even after the expulsion this Jewish family must have been of considerable importance for Cologne, otherwise they would not have had this box in the Town Hall.

The other three or four times that Poland is mentioned are in connection with mainly Silesian (at that time German, but today Polish) places. To give an example of one of these: Breslau, 1453. The Jews moved to other places in Silesia, Bohemia, Moravia and Poland.

I did not check Part Two of Volume III of *Germania Judaica* any further than the places mentioned by Weinryb. We may assume that the destinations of Jews who lived in places that start with the letters of the second half of the alphabet would not have been much different from those of Jews from the places A through L. Said differently, I assumed that no selection towards Poland would have taken place in respect of those leaving places whose name began with letters from the second part of the alphabet, and that being the case it appears that no substantial movement of german Jews took place towards Poland in this time period.

Germania Judaica clearly shows that where we know the destination of Jews who were expelled from a German town or city, they usually went to another German location. Sometimes only a few Jews were involved in such a migration, at other times it was a considerable number.

Discussion

The evidence of *Germania Judaica,* plus the inability of historians to produce evidence regarding substantial migrations from Germany to Poland, makes it clear that mass migrations from Germany to Poland during the periods investigated cannot be proven. The lack of evidence makes the Rhineland hypothesis questionable as far as migrations are concerned.

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Moreover, the finding of the wooden hanger with the Hebrew inscription in the Town Hall of Cologne, dated 1427, is evidence that total expulsion did not take place.

I should point out that I am certainly not the first researcher to question the idea that east European Jewry is based on migrations from Germany. As far as the Crusades are concerned, already in 1910 Kutschhera (pp. 199-200) wrote that in the days of the Crusades there were not enough Jews in the eastern part of Germany and in Bohemia to be able to send large numbers of Jews to Poland. King (1992) writes: "Demographically it is not possible to account for the enormous growth of Ashkenazic Jewry in Poland and other parts of eastern Europe from western European sources alone."

The interesting question concerning this subject is: how is it possible that the Rhineland hypothesis could become a generally accepted theory based on mass migrations without anybody producing any evidence for it? While reading the chapter "Origins and History of Ashkenazi Jews (8th to 18th Century) by Ankori in *Genetic Diseases Among Ashkenazi Jews* (Ankori 1979), the answer to the question presented itself. On p. 36 Ankori writes: "Expulsion followed expulsion: from England in 1290, from France in 1306 and twice again until it was made final in 1394, and in the 15th century from individual cities and provinces from Germany, [...] The better-known expulsion from Spain in 1492 [...] merely completed the picture. By the end of the Middle Ages and in early modern times, western Europe was *judenrein* [cleared of Jews]." And to complete the thought, he continues: "Thus, half a millennium or so after his original arrival on the Carolingian scene, the Ashkenazi Jew was on the road again. This time the direction of the movement was eastbound, to Central and eastern Europe, ...".

His basic idea, and thus the basic mistake, is the lumping together of all expulsions. The expulsions from England and Spain were the only ones which gave the Jews no choice but to leave the country. Neither France, nor Germany at any point became *judenrein*! The lack of knowledge about the real situation in Germany (and France) could lead to such a conclusion. This would also explain why Weinryb (1972) concludes that in 1500 there were only 10,000 to 15,000 Jews in Poland/Lithuania. That sounds like a reasonable number if they

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had to come from Germany. However, these estimates are not factual. Following this line of thought, it also becomes (almost) logical to assume that the expelled Jews went to Poland – how else can one explain east European Jewry? These easy assumptions may be the reason why nobody gives any evidence for the migrations to Poland – it all seems so self-evident.

Maybe there were some other migration streams from Germany to Poland in the period covered? If that would have been the case, for sure something would have been mentioned in *Germania Judaica.*

There are some points that are put forward by Weinryb as evidence of mass migration from the west (Weinryb 1972, pp. 29-31).

a. The ritualistic tradition of Polish Jewry resembles that of French-German-Bohemian Jews.

b. From the fourteenth century and on, an increasing number of surnames from German places are found among Jews in Poznan, Kalish and Cracow.

c. Many rabbis came from Germany.

d. In the fifteenth century some Jews came from Bohemia.

As far as the points (a) and (c) are concerned, they are the same. It is known that the level of Jewish learning in eastern Europe, at least until the First Crusade was very low. This is clearly shown by the fact that all 17 rabbis who are named with respect to *responsa* before 1096 come from western Europe, and especially from western Germany and France (Agus, 1965). A *responsum* is an answer given by a rabbi of outstanding Talmudic knowledge to a question put to him by a local Jewish court that felt itself incompetent to solve the question. It is therefore quite obvious that if rabbis had to come from western Europe, the ritual tradition might well be west European. This does not prove a mass migration from Germany.

As far as point (b) is concerned, I do not know how many surnames are involved, or how many of those names belonged to rabbis. With surnames one has to be careful, a place name does not always mean that the bearer of a place name came from that place.

Point (d) does not say anything about the origin of these Jews. Beider (2001, pp. 172-174) concluded from onomastic research that during the Middle Ages there was no relationship

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between German and Czech Jews. He does not know where the Czech (Bohemia and Moravia) Jews originated, and the names found do not point to any specific region.

It is quite obvious that individuals moved from Germany to Poland (merchants, rabbis), but this is not the same as mass migrations.

Conclusion

1. During the First Crusade and the Plague, the Jews of Germany did not migrate to Poland.
2. During the expulsions in the fifteenth century, the Jews were not expelled from Germany and did not migrate *en masse* to Poland. Remarks about Germany being *Judenrein* at the end of the Middle Ages are speculation.
3. The Rhineland hypothesis is not tenable when it has to rely on mass migrations of Jews during the Crusades, the Plague or the fifteenth century expulsions.

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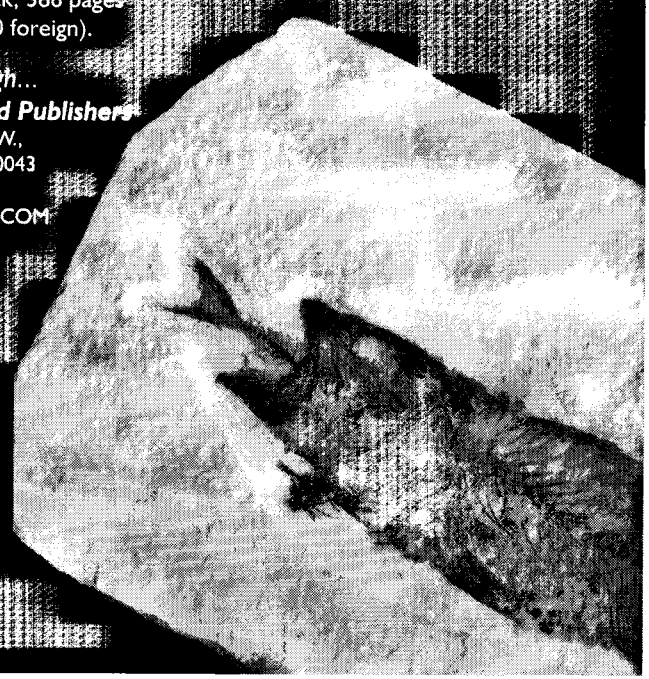

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The Future of the World 2000-2050

Seymour W. Itzkoff[1]
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The author examines demographic pressures and economic trends and forecasts worldwide chaos by the middle of the twenty-first century.

Key Words: World population; Globalization; International trade; Overpopulation; Third World crisis, World health.

Optimists

Optimists are still enthused with visions of amity and reciprocity and the belief that as a result of the forthcoming global economy, the world population, to probably number between 9 and 10 billion persons by 2050, will live together in harmony. Today, a torrent of taxation wealth from the developed nations pours out not only to their own poor but also the poor of the underdeveloped world, through the aegis of international organizations, the World bank, CARE, the International Monetary Fund, and the various Agencies of the United Nations, as well as bilateral aid of all sorts from the temporarily rich nations to the poor.

Tomorrow, the overseers of this flood of taxed wealth suggest, this will change. The poor will be rich.

The current shakedown of the West by the poor nations' wealthy representatives in the international organizations continues anon. The international bureaucracy, intent on perpetuating its own powers and privileges, constantly ramps up the din for redistribution, with the seductive dream of world prosperity down the decades.

Thus the only policy solution, ever-inflated expenditures to try to rebuild Africa, Latin America, and South Asia. Why? The answer is: ideological paralysis!

There have been skeptics during the past fifty years. Sir Peter Bauer notoriously described foreign aid as: "[t]he phenomenon of taxing poor people in rich countries to support the lifestyles of rich people in poor countries."

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Such doubters about the wisdom of throwing good monies after bad, are shown examples such as the Marshal plan after World War II, which did rehabilitate Europe, including former enemies, and Japan. Today these are powerful and wealthy nations. The exemplars in Northeast Asia include Taiwan, Singapore, Hong Kong, Malaysia, South Korea, the latter a success even after suffering the devastation of war, 1950-1953.

Thus, bureaucratic liberalism argues, if the above countries could prosper after aid from the international community, and then independently build themselves up, why not others, once we get the combination right? After all, fifty years of profligate failure in the "developing world" is only prologue to a best yet to come!

This dream-land scenario of the global organizations is truly inspiring: a middle class world of prosperous, democratically-oriented peoples and nations, well-educated in the Western scientific modality. A bonus, symbolized by the United Nations and other international institutions, is that we will also attain to a more peaceful world. This twenty-first century, we are assured, will be a better place then the past for the nine or ten billion people who will fill the cubicles on Earth.

Forget about the twentieth century, when perhaps 200 million people were destroyed in national or international wars, and by their own governments. Forget about the irrationally ugly beginnings of the twenty-first century. Give us more of your wealth, your taxes, the sweat and blood of your daily exertions.

The Great Hope: A Global Technological Economy

The keystone to this short term international process of social engineering is the expectation that the advanced information technology which has exploded so mightily in North America, Western Europe, Northeast Asia, and amongst the upper echelon of educated Indians in South Asia will spread throughout the world, bring us all together in a new international culture.

The spread of computer, broadband information technology, an infrastructure allowing people to move around, to see their own nation develop as well as other nations on the mend, will create educational institutions allied to the Western tradition, as has happened among the Northeast Asians, now including 1.3 billion people of mainland China. The altruism

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here is tangible. Already great global corporations are everywhere in the world, adding to the wealth, and creating the skilled, well-paying jobs that have and are bringing a modern world perception to the most diverse geographies, ethnicities, religions on our planet. And the citizens of the home countries, such as the United States, do not seem to be too worried that this wealth and productivity is spread around the world, as long as their own economy remain relatively secure, providing high paying jobs in the home front corporate headquarters.

Of course, those who direct economic activities within the developed nations have their own interests at heart in this vision of a relatively developed world participating in the modern technological advances of the West, here including the prospering Northeast Asians, the PRC, now a member of the World Trade Organization (WTO). The Developed World will aid nations through the international bodies because they know that the boys of Pakistan will less likely become terrorists if they study the principles of computing from an engineer associated with Microsoft, rather than memorizing intolerant passages from the Koran under a Wahabi-educated Mullah.

The following assumptions stand behind the surface optimism and short term planning for the future global technological economy:

1. World population can be held to a modest rate of increase, not beyond the already inevitable 9-10 billion, through new reproductive technologies, such that the world's ecological balance will not be endangered. Pandemics such as AIDS and beyond will be controlled through ongoing medical research.[2]
2. We can educate the peoples of the Earth equally so that they can adopt scientific technologies and move into the middle class global economic infrastructure.
3. Peace and tranquility can be ensured through the rule of international legal standards and democratization, aided by international political institutions, such as the United Nations and the European Union.

[2] Crossette, Barbara, "Experts Scaling Back Their Estimates of World Population Growth," *The New York Times*, 8/20/02.

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4. The heritage of racial, religious, ethnic, and national rivalries and hatreds can be eliminated through the gradual miscegenation of the world's peoples. Overt physical and behavioral differences between groups will gradually disappear. A world culture will bring all people together to enter the global market place of things and ideas.

Non-exploitation and peace will thus reign.

Realistic Pessimism

None of the above Utopian expectation are likely to occur in the next half century, or beyond.

1. Human behavior determines any demographic future. It is doubtful that anything short of catastrophe will alter the sexual behavior of humans in the underdeveloped world. Instead we search for magic bullets to immunize us from plagues such as AIDS. We endeavor not to alter behavior, but to erect a medical wall between the developed peoples and the problem.
2. An education that can develop the latent cortical potentialities of humans depends upon inherent genetic aptitudes. Already North America and Eur-Asia are in educational decline. For the rest of the world, these hopes are an ideological chimera. The expectation that global equality will be undergirded by an international educational/technological infrastructure is an irrational prediction, all the evidence argues against it.
3. That the undeveloped world will live under Western political standards of law and middle class independence of thought and action, is likewise Utopian. The most that can be hoped in much of that area may well be political supervision subsidized by quasi-colonial military forces from without, international and regional, and prayerfully, *benign* indigenous autocratic governance.
4. Ethnicity and nationality are here to stay especially as we slow economic and social change. Religion, even racial awareness, are ethnically based. The desire for identity is deep rooted in human nature. As globalization and science fail to work for these vast populations, centrifugal ethnic and religious consciousness will dominate.
5. The surface characteristics of conflict, such as the new international terrorism, may change, as will exploitation.

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> Slavery and feudalism faded. In their stead, social class dominated. We should not expect these conditions of human social life to disappear until such time as fundamental global intellectual deficits have become merely a part of human evolutionary history.

The question Americans still have to ask is whether the prosperity of the new technology economy that culminated in the late 1990's can continue, given the recession of 2001-2, and developments following the terrorism of 9/11/01? Enormous wealth was produced in the last two decades of the twentieth century. The spill over effect that helped to advance some of the newly industrializing nations in Latin America, Eastern and Southern Asia, was significant. They sold to the U.S. an avalanche of good but inexpensive consumer items, and thus barely providing for their rapidly expanding populations. U.S. purchases in dollars created an international cash flow large enough to stimulate the creation of an incipient international middle class. So, too, the oil-producing nations benefited from Ameica's need to provide for fuel for great ten wheelers and its growing penchant for SUVs.

There are many who saw the almost collapse of the technologically based global economy in 2000-2002 and the spread of terrorism as the beginning of a marked change in the international scene. One author, Niall Ferguson of Oxford University, saw four factors defining the succeeding ten years: 1. The globalization of terrorism; 2, A final oil/natural gas crisis of supply reaching a climax in 2011; 3. A formalization of American imperialism; 4. Centrifugal fragmentation of multi-ethnic states into their multicultural polities as a result of globalization.[3]

But the optimists say that the current dynamic has about twenty years. In the short run we may be able to control the current decline. We may yet be able to provide the middle class West, including Northeast Asia, with a stable even hopeful standard of living and benign life-style. By 2020, extremely conservative demographic projections estimate a world population of at least 7.5 billion people, (1.6+ billion humans added to the current world population: another India, Pakistan, Bangladesh, Vietnam, Egypt, Mexico), almost all of this increase

[3] Ferguson, Niall, "2011," in *The New York Times Magazine*, 12/02/01.

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from the impoverished lands of the Third World. The hope is that medical philanthropy will work its "miracle," *i.e.*, a benign increase in the number of *Homo sapiens*, without new pandemics such as AIDS.

There will be definitive hints when the situation has begun to tumble out of guru control. Expect unemployment to start heading north, above 10 percent. In 2002, Saudi Arabia had an unemployment rate of 25 percent, with much oil revenue public spending. After 2020, deficit spending on a massive scale may be required in both in the U.S. and in other parts of the developed world.

Trade imbalances will grow to astounding levels, inflation, the printing of money to cover these expenditures will begin to undermine national and international currencies, the Dollar and the Euro. Expect more fearful terrorism. Unhappy populaces, massive international migrations, increasing personal thievery, inter-ethnic violence, all as demand sinks the global economic and cultural system, ever heavier with people and human need.

Global Optimism and the Population Explosion

Here we must again spell out the scenario of the long term optimists. They believe that the world population of 9-10 billion humans on this planet, the official demographic prediction, can offer the West and its affiliates unlimited opportunities for continued wealth production. Nine or ten billion people, it excites the executive boardroom. The Chinese won't be able to produce everything, they say, and anyway they will probably be just like Western capitalists by 2020. As for the Chinese population problem, they will be able to move their surplus people to Xinjiang Province, Tibet, and Inner Mongolia, utilizing the Himalayan water.

Between 2020 and 2050, optimists expect, enough progress will have been made in birth control technology and education such that religious objections from all corners of the spectrum will be moot, and semi-voluntary restrictions on fecundity similar to what is taking place in the West. But note that it is the indigenous populations of the nations with the lowest birth rates, not their new immigrants, that have the low birth rates, not the immigrants. This is true also for Spain and the Italy, where the Roman Catholic faith objects to all forms of birth

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control *sans* abstinence, hardly *de rigueur* among Spanish or Italian males and females.

It is not popular to be negative about the future. It won't get worse, the internationalist liberals and corporate executives argue, because there is a great dynamic of modernization being pushed by the most powerful nations on earth. The Soviet empire has withered, and we now have the friendly Finnish/Russian face of Vladimir Putin. America's ability to "change the regime" in Afghanistan and Iraq was a great lesson in the power of scientific technology. Building on this, Microsoft, Intel, GE, Siemens, CityGroup Philips, Sony are expected to win the world for moderation, modernity, the middle class. The optimists even expect that with persistent help from the West even Africa will get back to where it was in 1945. But has science beaten back ideology in Afghanistan and Iraq? Is Africa, with its vast wealth, on the road to the prosperity that optimists envisage?

The optimists assume that the three or four billion new souls who will be added to the three or four billion existing impoverished souls on our planet during the next few decades will be able to add to the per capita economic spending spree, wealth that will also allow governments responsible to their citizens to modernize and/or renew their cities and by-ways. But if that does not happen? Sub-Saharan Africa, including European dominated South Africa, had a 4% share of world trade in the early 1980s. In 2002 its share had dwindled to 1.4%.[4] It may well get worse, gradually pulling down the haves toward the ultimate equalization, stagnancy, and civilizational malaise.

The basket-case, failed ("developing") nations are gradually becoming wards of the international community, once more candidates for colonial resuscitation by the waning "haves," now acting under the umbrella of the United Nations, NATO, ad hoc regional groups financially supported by the "haves." By 2050 these international organizations will be engaged in policing the masses at the bottom, nations gradually dissolving into primeval social and economic patterns, not without unimaginable chaos and pain.

The waves of immigrants setting out in desperation from an

[4] Stevenson, Richard W., *The New York Times* 05/26/02.

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ever more insolvent "third world" could become a tide of "tsunami" proportions, calling up military deployments at the borders and shores of the now-fragile middle class societies to fend off these masses as Malaysia has already done once. They will succeed only in part. In the West the emotional call of idealists to admit this human flood, fleeing tyranny as well as hunger, will issue from the ballot boxes and legislatures of the recipient nations.

One of the sources for the weakening capacities in what we now call the "first" or developed and democratic capitalist world, will derive from the pressures generated by their own enfranchised and minority poor. The cry for more "affirmative" action and the redistribution of wealth from the ever smaller proportion of employed and productive populations to the voting poor, will change the political landscape of the United States and Europe. For unlike the East Asian nations, the demographics of Europe and North America will show ever larger minority populations of very differing ethnicity from the halcyon days of prosperity and peace, the mid-twentieth century.

Times are still relatively good for the American people. Their pre-9/11/01 per capita income was c. $34,000. This compares, for example, with Mexico's current "prosperity" per capita income of $5800, (a few extremely wealthy and masses desperately poor). In the past 50 years the Mexican population has gone from about 40 million people to 100 million. And remember, the above per capita income would not be as high if one had to add in the ten to fifteen million Mexicans who have recently immigrated to the United States, legally and illegally. The Mexican birth rate is almost comparable to that of Saudia Arabia, and much of the Mexican economy depends upon the United States continuing to purchase their goods, especially those of the American corporations which have opened up shop below the border. This analysis holds true not only for the Saudis and Mexicans, but for too many other countries around our world. The productivity of the United States, plus the insatiable appetite of Americans for foreign made goods and raw materials (oil), has been the steam engine for the international technological economy and its civilizational veneer in the final fifty years of the twentieth century.

Within the borders of the U.S., if one traces the economic destiny of poor American white families, and two-parent black

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families, in the 1970-2000 period one will discover that they have today risen into that upper 20 percent group, at the least. The expansion of the poorest segment of our population, derives from the increase in numbers of the poor, illegitimacy rates of 70 percent in the African-American community, illegitimacy rates of 33 percent for the population at large, as well as the legal and illegal immigration of poor, uneducated people from the "third world." Here is the real source of our growing social inequality.

As the U.S. national population increases, an increase that comes especially from the poorer classes, both immigrant and indigenous, will a smaller and smaller proportion of the population produce the wealth that provides the masses with the services that government needs to supply? Will the economically well off, the *geese laying the golden eggs*, want to expend their efforts to continue to produce this wealth if they are subject to increasing levels of "progressive" taxation, in order to maintain basic services for bloating numbers of poor people in the United States? And if they flee, will those on the lower end of the social class ladder, today barely literate "graduates" of a failed public school establishment, rise up, step in, to themselves produce the enormous wealth that has allowed the United States to soar to such power and hatred in the international community?

Consider the future of America from the standpoint of educational achievement. The National Assessment of Educational Progress documents the decline of educational achievement since 1950: Today, two thirds of African-American and Latino fourth-graders are functionally illiterate. One third of white fourth graders are so deficient.

Example: New York State, supposedly a leader in educational expenditures and achievement, reported in 2002 that 73% of white 4th graders achieved the extraordinarily low *minimum* standards in English; 39% of blacks and Hispanics achieved this level, as did 69% of Asians. For *basic* 8th grade English: achievement 55% white, 24% black, 26% Hispanic, 59% Asian. For *minimum* 8th grade math achievement: 52%-white, 13% black, 16% Hispanic, 58% Asian.[5]

Educated leaders experienced in the dynamics of

[5] Traub, James, *The New York Times*, 3/28/02; *The New York Times Magazine*, 4/07/02.

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modernizing societies purport to guide their respective constituencies with a sense of design: "Here is our plan. This plan is based on certain assumptions about how we progressed to our advanced state, how we can do even better into the future. This is what we believe to be true. Allow us to legislate into law our philosophical plan for an even more glorious future. Give us your vote, your assent, your earned wealth – we have grasped the facts – trust your leaders."

Sadly, it's not going to happen that way. Indeed, in the immediate future, several hopeful decades may come our way and that of the world at large. But the seeds of dissolution are already busily germinating. In the end, we will experience a global catastrophe, mostly affecting the vulnerable poor. The message that the poor will hear from the now emasculated developed world will be similar to what a Roman emperor wrote to the Roman citizens of Bath in Britain, the last oases of Roman law and culture in that country, as the Angles and Saxons bore down upon them from the north, c.430 CE. "You're on your own, good Romans. I cannot spare any legions, our hands are full in Gaul and elsewhere – good luck."

The reader must remember that fifty years ago the same philosophical and political leadership, whipped up our middle class public into a frenzy of anti-colonialism. The promise was great. Give the peoples of the world, then subjugated to white European colonialism, self-rule. The result would be a bright new day for the world. Socialism, populism, the reigning egalitarian theology, then purported to "sweep" away the forces of racism, slavery, exploitation. A United Nations dominated by these newly enfranchised nations heralded a new day.

This "socialism," mostly proved to be a new form of tyranny. One can list the "colored" leaders of their own people who ripped them off as no self-interested colonial "exploiter" would have. In the process of the shake down of their own people, trillions of dollars of "blood guilt" foreign aid poured into these nations. Guess where this wealth has gone, and to what good? And of course we continue to hear the same philosophical/political litany from liberal economists such as Jeff Madrick: "It's time for the rich world to cough up some serious money for the poor."[6]

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[6] Madrick, Jeff, *The New York Times,* 11/01/01.

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Recall that in February of 1947, six months before the decision to grant independence and then partition, Lord Mountbatten, Viceroy of India, announced that India's population was 347,340,000. Today there are over one billion Indians. Are the more numerous poor any better off? In the hey day of ancient Egypt's wealth, power, and civilizational dominance, there was a population of some five million people living along the Nile. The province of Egypt trading with Rome, provided 30 percent of the peninsula's food need, with the same approximate population. Egypt's population probably shrank during the Middle Ages (twelfth century), when the Jewish philosopher and medical doctor Maimonides succored to the needs of the Kurdish Caliph Sulemein and his court at the new capital of Cairo, then one of the leading centers of learning and commerce in the Mediterranean world. Today, supposedly free of colonial domination, Egypt has 70 million gasping citizens, and that figure increases by a million every nine months.

The problem with the optimists, then, lies with their extrapolation of the experiences of one small portion of the developed world, the middle class, secularly educated elites of North America and Europe, plus Northeast Asia – the West. They see this experience as a political/philosophical/economic profile for a program that will encompass the entire globe, including the existing and growing large internal welfare proletariats in the West. Unfortunately, this profile view of the future of "globalization" will not characterize the situation in the year 2050.

What the World Will Look Like – 2050

For several decades after 2000, the world situation will appear hopeful. Then, surprising events will begin to regularly occur, gradually putting the breaks on our forward motion. By 2050, the globe will be in the midst of a serious crisis:

1. Continued devastation in the "Third World," requiring ever more conscience monies from the formerly developed nations, depressing the entire global economic profile and adding an even greater and volatile ideological tonality – why are these people suffering, surely it is the fault of the formerly "wealthy" exploiters. Third World elites will likewise agree to this demonology, fanning the fires of national, ethnic, religious, hatred and envy which led to the

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9/11/01 terrorist acts. The response? The former colonialists will be quietly returning, ever more, as in 2003, to police the chaos in the world, only now without apologies and make-believe.

2. A geo-political struggle, perhaps even military, for water, open lands, fertile soil, in a world seriously over populated, and under-resourced. The psychic stress of perpetual crisis management over basics, will have its social and political impact on our vision of the possible, i.e, pessimism and resignation.
3. The formerly developed world will discover that the promise of continued expansion of productivity, the expansion of trade and wealth, has now become a chimera. The instability and danger in the world will have set a pall upon the creative innovation of the educated, the traditional expectations of hopeful horizons. The demands of basic life-support taxation will dry up the civilizing institutional profile of the West, museums, research institutions, high culture, libraries, public parks.
4. Irrationality, ideology, theological and social nihilism will begin to efface the liberal, secular, scientific profile of the West. Memory outcomes: Weimar Germany under the press of the great depression, the ensuing contest between communism and nazism, the parallel rise of Stalinism. Classical Rome, the Christian search for salvation in a life hereafter, the empire drifts into perpetual conflict, it produces mass *ennui* for the here and now.
5. The perpetual political debate over cause. Ever more accusations of racism, bigotry, exploitation, directed by the have nots to the waning "haves." The so-called democracies now ruled by a redistributionist ideological elite, voted into office by the majority "have nots." Conditions, material and social will get progressively worse throughout the twenty-first century, inequality downward, until the walls finally come falling down into dictatorship.

The Roots of Failure

The kind of society that we will live in, its material and technological base, the system of laws and behaviors, values, the quality of the cultural or mental life of the citizens, all this is based on the kind of people who live in such a society. When we

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say, kind of people, we do not refer to the size of the people, nor to their physical coloration. We must refer to the average general intelligence of the people, or simply, what their minds demand of a life to be lived. Certainly, their experience and education are important factors. But, in the end it is their inner intelligence that is decisive for themselves and the culture (education) that they will create.

Intelligence is not simply a score on an IQ test. Testing does give us a predictable picture of a person's general educational and vocational achievements in developed literate societies. The kind of mentality that a population, a nation, an ethnicity shares, will produce the kind of culture that that they call normal. There are enormous behavioral differences between individuals and their ethnic and national groupings throughout the world. These behavioral differences are rooted in biological intelligence. Intellectual deficits, as compared to that of the civilization builders, cannot be overcome by universal compulsory education. A visitor from Mars, examining differing cultural profiles would have no difficulty making a cogent evaluation of a people in terms of their comparative intellectual achievements.

Any rational person today, will tell you that a small minority of extremely brilliant people, intellectually, along with a larger cohort of able citizens, not geniuses, but competent hard working humans, are responsible for producing the great civilizations of the past and the present. They could be engineers, writers, computer scientists, physicists, mathematicians, philosophers, medical researchers, architects, painters, businessmen and traders, legal scholars and judges, musician and artists. Western civilization and the great literate civilizations of the East have clearly produced an on average intelligent citizen capable of supporting and being sensitive to the values of the extremely talented few who have pushed civilization forward from one intellectual achievement to the next.

Productivity and Consumption

Evidence for the ominous relationship between the advance of technology/productivity and the advance of unemployment surfaced in a surge of productivity in the fourth quarter of 2001, in the United States. While unemployment from the recession

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and the 2001 terrorist attacks on the U.S. increased by almost 2 percent, productivity rose a breathless 3.5 percent As workers were laid off, companies employed existing and new technology to increase efficiencies amongst the remaining work force.

The United States prospered because it was at the forefront of inventing the new and making sure that it was produced at the highest levels of efficiency and quality. In 2004, many technology positions are filled by educated foreigners from India, Northeast Asia, Europe, and Israel. The great corporations are going off-shore to find skilled workers that will do the job for cheaper wages than need to be paid in the United States.

By the year 2020 this former advantage will probably have been largely transferred overseas as nations, presently underdeveloped, China, Eastern Europe, perhaps India, will be presenting to the global economic culture increasingly well educated line workers, technologists, and scientists, who will do equal quality work for much less money. In 2020 the U.S. will have a population of close to 340 million people. Where will the jobs/consumers come from? The hopeful side of the argument, is that no one can predict the innovations, inventions, technological and productive breakthroughs of the future. And indeed, it is clear that the internet and broadband communication are in their early stages of development. It is likely that such information technology will continue to propel the technological *avant garde* into economic ascendancy, for a few more decades. But the populations of the poor, despite AIDS, are still exploding, the rich middle class nations barely replacing themselves with young minds. Conclusion: those wealthy who are able to pay will be fewer in gross numbers, as well as in demographic proportion.

No Paying Customers

What we will find starting about 2020, is that the developed world, especially Europe and North America, with an ever larger percentage of "poor" people to be internally supported will find fewer and fewer available markets for their expensive, high margin products. The billions of poor will not be able to rise to the productive challenge of selling their own industrial and craft items at world class prices. True, they may have in ground natural resources, which our international oil conglomerates

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will extract for them, at a price. But, if they don't sell, they can't buy. The ordinary people are not likely to see the fruits of nature's bounty. Even the Saudi's who have vast oil reserves are now deficit spending, 18.6 percent over budget in 2001, so as to keep their mafia gang on the Riviera. Their day in the sun is quickly ebbing.

The developed world will contain within its borders increasing numbers of Third World immigrants legal and not, who will be dependant on the largess of these societies. These internal and external populations will also not have the wherewithal to purchase the products of the most developed nations. The developed nations will have to compete with poor nations having educated work forces such as China, willing to earn their bowl of rice or noodles, forcing the North American and European workers to work for less. Earning less, how will our best workers be able to purchase the gadgets created by our geniuses. The geniuses are not going to work eighteen hours a day to invent new technologies that cannot be widely sold at a reasonable profit, and thus keep them in Silicon clover. Likely they will sleep more, work less.

Further, the Intels of the world are not going to invest 7.5 billion dollars for capital investment and 4.5 billion dollars in research if they cannot look forward to a growing return on this expenditure. As the world's population gets poorer and ever more subject to the social and medical afflictions of the congenitally poor, such surpluses will disappear. Governments, through the tax system will be force to respond to ever more dire emergencies of various kinds, including terrorism and military conflict as population pressures cause tensions to rise higher. New high tech wireless communication systems and computers on a pin head will recede in importance as conflicts increase and the ideological moral imperative demands help for the poor of an increasingly crowded world.

Negative Insurance

In the scenario here bring presented, the facts are that four billion destitute are being added to the current four billion destitute on planet Earth. What are the odds that two billion middle class humans will be able to sustain the moral existence of these impoverished?

Liberal Academic/Organizational Bureaucrat: "We can

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educate, modernize, and make these billions productive citizen members of the global scientific/technological economy. Of course, we must concede that, out of the nine or ten billion people living on this planet in 2050, perhaps one or two billion will still be wanting if we do not actively redistribute the wealth of the developed world."

Dreamland. The developed world itself, perhaps excluding Japan, will have its fill of peoples from the Third World, poor and desperate. The soliciting masses are there already, and having many children.

But consider other possible events that, unlike the demographic catastrophe in the making, are not already in the pipeline.

1. Climate disintegration. Already large parts of the world, the Middle East, North Africa, even the western parts of the United States, are undergoing serious water shortages. The Rio Grande River/Falcon Dam is dry before it reaches the Gulf of Mexico. More people, more demand, mother nature may not be appeased through seeded clouds, or smoke incantations. The search for water resources by nations has invariably led to war.
2. Sudden catastrophe such as earthquakes, hurricanes, typhoons, require emergency aid. There has to be food and medical supplies available. Where is the surplus that will be transferable without "drawing blood" taxation from already suffering populations.
3. What new pandemic will arrive, such as AIDS, quietly and then with devastation? Will it be Ebola? New forms of small pox? What new medical mystery is headed the way of nine or ten billion people packed into fetid urban sprawls?
4. "Across the Southern hemisphere a new wave of non-democratic states with theocratic pretensions, some of them openly repressive, will compete for regional dominance. In 2050, almost 20 of the largest 25 largest nations will be predominantly Christian or Muslim; at least 10 will be the sites of intense conflict....The coming havoc, in short will make the bloody religious wars of the 16th century look like calisthenics."[7]

[7] Jenkins, Philip. 2002. *The Next Christendom, The Coming of Global Christianity*, N.Y.:

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Why Failure? In *Genesis*, the Joseph tales make us aware of the key strategy of national survival. By planning for the seven lean years that must always arrive after the seven years of plenty, a nation such as Egypt prospered for thousands of years. Protected by Mother Nile, true, but with the added prudence of those dependent on it. Egypt required rational leadership. Given our knowledge of historic events, Egypt did have wise, if conservative leadership for these thousands of years. Yes, the Pharaohs! Indeed, as with all civilizations, it eventually succumbed.

The modern West controlled the underdeveloped world for close to 500 years. Then it opened its arms to a world that was to become one. For over fifty years, 1950-2000, it determined and then created the conditions for a world of potential chaos over the ensuing fifty years, 2000-2050. It created this beckoning miasma, because it failed to look rationally into the nature of humans and the societies that they had independently crafted during the 500 years of western contact and conquest.

The ideological assumptions of our time now digs deeply into our souls, by a pretense to succor profound moral roots, quasi-religious in inspiration and validity. The controlling assumptions: all human beings and their ethnicities are equally educable, equally productive, equally self-disciplined. The truth: These holy verities are a charade. The empirical evidence both in theory and in historical practice has long demonstrated this falsehood.

Today's educators and leaders are refusing to look fact in the face. They conjure up scented clouds for the masses to inhale, regardless of the harm that these utopian dreams are doing to those they purport to protect and succor. The result of this so-called one-world morality will be the undoing of the natural ecology of our planet, our civilizational future, and untold suffering for those who will be so unfortunate as to be alive then.

This article was adapted from Professor Itzkoff's recent 2003 book, *2050: The Collapse of the Global Techno-Economy*, Ashfield, Mass. Paideia Publishers.

Oxford University Press. (Quoted in *The New York Times Sunday Book Review*, 5/12/02).

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The Teuton and the Roman

The popular writer and scholar **Charles Kingsley** (*Westward Ho!, The Water Babies*) movingly describes the decadence of the latter-day, multi-racial Roman empire and its conquest and temporary revitalization by the Germanic Ostrogoths and Langobards. After overcoming the corrupt but massive power of Rome, the innocent "forest children", as Prof. Kingsley portrays them, re-invigorated the land, not only with their own strength but by their sense of morality and penchant for law and order. This was the era which saw the founding of the modern nations of Europe.

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The Misuse of the Term "Nation State"

Roger Pearson[1]
Council for Social and Economic Studies

The author argues that the clarity of discourse is lost by the misuse of the terms "nation" and "nation state," attributable to ignorance of the evolutionary history of human society. He maintains that human social organization evolved from pair-binding and the family, and thence through an elaboration of kinship ties to the emergence of larger societies that were relatively homogeneous, both genetically and culturally, and which are properly known as nations. The term "nation-state," originally devised to refer to a nation that enjoyed a degree of self-government and political autonomy, has increasingly come to be used in recent decades to describe any geographically-delineated political aggregate of individuals living, willingly or unwillingly, under a common government – no matter how varied their biological origins, culture or personal value systems. He regards this terminological misuse as a significant affront to clarity of thought because societies which are united by common values and a belief in common, shared origins, are more able to live together in harmony and to be willing to sacrifice personal interest for each other's good than those which lack such unifying sentiments.

Key Words: Band; Descent group; Clan; Phratry; Tribe; Feudalism, Nation; Nation state; Nationality.

It is generally accepted that human social organization evolved from pair-bonding. Pair-bonding led to the emergence of families, and beyond families, kinship ties formed a basis for the regulation of behavior in larger tribal societies, and to a lesser extent in the much larger societies which we know as nations. Nations have been defined as human populations that share, or at least believe that they share, a substantially common history, culture, and ancestry.

As such, the term "nation state" was originally devised to refer to a nation that occupied a distinct territory and enjoyed a high degree of political autonomy. However, in recent decades the term has been increasingly applied to any geographically-delineated political aggregate of individuals living under a common government, no matter how varied their biological

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origins, culture or personal value systems. This results in so much ideological confusion, and I felt it desirable to once again invite attention to this contradiction in thought, drawing largely on an explication of social evolution first presented not less than thirty years ago in my *Introduction to Anthropology* (1974).[2]

The Origins of Human Society

While nonhuman primates tend to respond to sexual stimuli with very direct and largely unrestrained biological responses, human societies heavily restrict sexual behavior according to elaborate conventions, and it has been suggested that under these circumstances much of the emotional energy associated with sex tends to be sublimated into other activities. But the practice of pair-bonding leads among humans to something even more important than this. It leads to the institutionalization of the family, a social group comprising in its simplest form the original pair-bonded adults plus their offspring.

Anthropologists and sociologists still debate the ideal definition of the term family, but all agree that in some way the idea of the family combines the idea of pair-bonding with the concept of the household, as a cooperating economic unit. The evolutionary history of the family as a social institution makes this clear. The pair-bond is a form of cooperation which developed because it promoted the survival chances of the offspring. A family may therefore best be defined as a social group comprising one or more males linked by a socially recognized set of mutual obligations and privileges to one or more females, together with their offspring, who face the problem of survival as a joint enterprise.

The human family is the basic unit in a more complex network of community ties. As memory developed among our hominid forebears, so the pattern of behavior learned in infancy tended to be preserved into adulthood. Baboon infants lose their special relations with their mother as they grow into adulthood; and of course they know no father. On the other hand, chimpanzees, which have been speculatively equated with an early hominoid level of behavior, reveal a partial extension of infant patterns of behavior into adulthood in the apparent

[2] Roger Pearson, *Introduction to Anthropology*, Holt Rinehart, New York, 1974

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development of incest prohibitions that prevent the adult male from attempting sexual relations with his own mother. The further development of memory among our own hominid ancestors resulted in a still greater projection of attitudes learned during childhood into adulthood.

The slow but significant evolution of speech among hominids would also tend to promote the conventionalization of patterns of learned behavior, not only through the exchange of ideas but also by the invention of fixed labels for particular individuals. Labels such as "mother," "father," "sister," and "brother" which are learned in infancy continue to be used in adulthood, and thus perpetuate into adulthood the patterns of affection, trust, and mutual obligation acquired during infancy. As adults, human males and females continue to be guided by the social rules learned in infancy. In contrast to most nonhuman primate societies, in which old age incapacitates individuals in the struggle for dominance and submission, the human father may retain the loyalty of his children even in sickness and senility.

Patterns of affection and obligation develop between siblings as well as between parents and children, and as brothers and sisters grow up to marry and establish their own families, so eventually the entire community will tend to become interlaced by a pattern of learned roles, attitudes, and statuses. Thus a man's brother becomes, in the course of time, an uncle to his children, and his brother's children become his own sons" cousins. In this way not only did pair-bonding produce the family, but at the human level it also produced the concept of kinship. It effectively replaced intragroup conflict by intragroup cooperation substituting patterns of mutual obligations for dominance and submission as the basis of social order. Henceforth every hominid born into the group acquired at birth a set of privileges and obligations, a recognized niche in an integrated social system. Kinship had evolutionary value in that it replaced the principle of dominance, rooted in conflict, with an ascriptive system in which social order was ensured by a pattern of learned behavior – the rules and obligations implicit in kinship ties – acquired at birth; thereby transforming the hominid band into a more efficient team of cooperating individuals who faced the problem of survival as a joint venture. Kinship was a cultural innovation that had survival value, and

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those groups which first developed efficient kinship systems had superior survival chances over those that lagged in this respect.

Held together by a network of kinship privileges and obligations, earlier human societies saw kinship not as we see it. In kinship based societies kinship is not just another category of social behavior in the sense of political, religious, or economic relations. In such societies kinship implies almost every other kind of relationship known to society. It embraces them all. In such societies kinship is the bond that holds all the members of the society together, and defines their behavior and relationships completely. Traditional kinship obligations and privileges define the limits of all possible relationships between the members of the community.

Only when society becomes larger do we begin to find distinctive political institutions that are not an integral part of the kinship system. Political institutions may be described as socially approved processes for defining the norms of acceptable conduct, for allocating offices of leadership, for settling disputes, and for organizing group defense. In earlier human societies the kinship system took care of all this. Only at a higher level of social complexity do distinctive nonkinship Political Institutions begin to emerge. Government consequently emerges unheralded as local groups begin to grow in complexity, initially through an elaboration of the kinship system, and only later by the inauguration of political institutions separate from the kinship structure.

Band Societies

Thus the analogy of primate society, the evidence of archeology, and the study of surviving hunting and gathering societies all suggest that man's primordial hominid ancestors lived in small territorially based communities long before they had evolved to Homo sapiens status. These early hominid territorial groups are known as Bands, to distinguish them from the nonhuman primate troop from which they probably evolved and from which they differ because the hominid habit of pair-bonding and the resultant family pattern of social organization involves food sharing and a division of labor between the sexes.

At the simplest level these small human bands each represented a distinct Mendelian population, being primarily inbreeding and hence largely isolated from a genetic point of

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view, like nonhuman primate troops. Such predominantly inbreeding hominid territorial groups are known as endogamous Bands.

Each endogamous band is autonomous in its own territory, and roams around this territory more or less continuously in search of food. Although divided into families, each individual is linked to every other individual by ties of kinship and the bonds of close companionship. The principle of incest normally operates to prevent sexual relations between members of the same family unit, but the simple fact of distance causes the members of these bands to find a mate from another family within the band.

Band type societies are described as acephalous. They generally lack headmen or leaders. A person who shows particular talent may be listened to with respect, but each adult male, as the head of his own nuclear family, is essentially a free agent in his own right, bound only by the cultural traditions which oblige him to show loyalty and diffidence to his fellows, particularly to those who are senior to him in the kinship system. There is no sense of authoritative power in a band type of society in the sense that authority implies coercive power vested in any individual by the members of the group.

Truly endogamous band-type societies are rare in the contemporary world, although several peoples, such as the Yahgan are predominantly endogamous, only occasionally intermarrying with neighboring groups. But since nonhuman primate troops generally inbreed, it seems justifiable to suppose that at some earlier stage in the history of hominid social evolution predominantly endogamous bands were the rule rather than the exception.

It may be noted that baboon troops sometimes increase in numbers to the extent that they are forced to divide into two distinct troops, sending off a colony to occupy a neighboring territory. Human bands may also become too large for the territory they occupy and send off a colony to settle a new territory. But after baboon troops divide, they lose contact with each other, and even if the two troops subsequently meet at a common waterhole, they show no evidence of particular friendship or recognition. Gorillas and chimpanzees, by contrast, show signs of recognizing former associates; and at the human level, kinsmen and kinship ties are definitely

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remembered. Consequently when a human band sends off a detachment to colonize a neighboring territory the kinship ties may be preserved, and the two groups may retain any preexisting attitudes of sympathy and kinship. When the members of the two groups meet again, they will then do so with confidence, because they are meeting cousins and kinsmen who share a common language and a common folk tradition with them.

In such cases there will be no barrier to the exchange of young women as wives for each other's sons, and should interband marriages take place, these reinforce the mutual ties between the bands for yet another generation. The exchange of womenfolk as wives serves to prevent the bands from drifting apart genetically, linguistically, and culturally, and intermarriage keeps them united in every way except economically. As the principle of incest operates, it may even become the rule to find a wife from a related and friendly neighboring group rather than from within one's own group, also thereby reducing the possibility of tension and conflict arising out of rivalry over women within each separate territorial band. As among the Arunta of Australia, the result is a group of local bands each independent and autonomous in its own territory, but all held together by a common language, a common culture, and even by a common gene pool. Although the members of these bands may know nothing about genetics, they will know that they look alike, that they share descent from common ancestors, that they share common folk-memories or traditions, and that they are recognizably different from the members of alien bands speaking alien languages, whom they will treat with suspicion.

Interbreeding exogamous bands feel a sympathy for each other, not only because of the bonds of intermittent companionship, language, and culture that unite them, but also because regular intermarriage binds them tightly with kinship ties. In consequence, the members of a group of exogamous bands may sometimes unite to aid each other, as when under the pressure of an expanding population the territory of a related band is subjected to infiltration by newcomers. The members of band-type societies do not always fight to defend their territories. An Eskimo band whose territory is invaded by rival hunters usually pack their belongings and move on to a less crowded area rather than attempt to dispute against a more

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formidable group. But if the new territory is marginal land, providing less food, a bad year may eliminate the band that was ousted from the better territory. Because a group of cooperating exogamous bands constitutes a considerably more formidable body than a single endogamous band, the latter inevitably give way to exogamous bands. Only a few endogamous band-type societies have survived into this century, and these are mostly located, like the Yahgan, in the more remote corners of the earth.

Clans and Phratries

In the course of time, contiguity may decline as the prime determinant of exogamous bands, but when this happens they may continue to be linked by memories of kinship. Territoriality is the main principle behind the band, even though internal cooperation is ensured by kinship. However, as the population of the band increases it divides into two or more separate bands, and spread over a larger area, interband marriages will emphasize the role of kinship and kinship links often become a powerful social force promoting collaboration between kinsmen living in separate geographical locations. When this happens the members of an exogamous band will think of themselves as the members of a specific and identifiable kinship group, such as a clan.

By definition, a clan is a group of people who believe themselves to be bound to each other by reciprocal privileges and obligations by virtue of descent from a common ancestor, real or imaginary. Phratries are simply larger kinship groups, comprising several clans. Clans always have distinguishing names, and this is often the name of the eponymous founding ancestor.

In the course of time a clan may be reproductively successful and proliferate, in which case it will likely send off new colonies to settle fresh lands adjacent to the parent territory, or in the case of ancient Greece, lands readily accessible by sea. Only a small number of families may be involved, and if for example the leader of one such colony is named Millan, and that of another sibling colony is named Donald, the succeeding generations may call be known as MacMillans (or descendant of Millan) and MacDonalds in their honor. Because the MacMillans and the MacDonalds share the same heritage of

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folklore, language, and culture, and because they will remember that they are related to each other, they will feel safe with and probably negotiate exogamous marriages, with MacDonald men marrying MacMillan women and vice versa. Many variations on this hypothetical pattern of naming and clan organization may arise, but the role of the descent group and of kinship identity as a basis of human social organization remains fundamental.

Tribes

The concept of what constitutes a tribe is one of the most disputed in anthropology. It is generally accepted that a group of intermarrying exogamous bands as a tribe, provided that the members think of themselves as a kin-related group and share a common language, culture, and contiguous set of territories. It is agreed that a band is essentially a territorial unit, whereas the principle of the tribe is rooted in the principle of kinship rather than that of territory. It would seem reasonable, however, to distinguish between bands and tribes more clearly than this, by enquiring to what extent a degree of political integration of the component clans and other kinship groups may exist. Bands are essentially autonomous units; but in a political sense a tribe always has some established formula for coordinating the relationship between the member units. When territorially segregated clans cooperate regularly and establish a clan council to ensure a degree of cohesive unity between the component units, they may be regarded as a tribe. Such a council of clan or tribal elders may or may not elect a permanent chieftain, and may not in its simplest form have any coercive power; but even if it functions in a consultative sense only, once some kind of supraband coordinating mechanism exists, we have a politically cohesive tribal society.

The earliest tribal councils were still rooted in the concept of kinship. Thus among the Bantu tribes of Rhodesia, all government was essentially familistic at the village level. When an issue was to be decided, the male heads of families met to discuss the matter under the "chairmanship" of the village headman, a position which is usually hereditary, being equivalent to a clan or lineage chief. All decisions were taken unanimously. The idea of a majority group dominating a sulking minority is objectionable in a tight kin group. Such debates might take several days, but in the end, as the mood of the

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meeting becomes more clear, the minority would eventually cease to advance any objections they may have had and go along with the majority element, putting on as good a face as possible.

But tribal societies are not always the result solely of the proliferation and division of a single descent group. The obvious way in which a tribe can come into existence is, as we have just explained, by an increase in the original population, causing an expansion in area of settlement, which causes a single band to grow into a number of exogamous bands. As these become separate intermarrying clans, linked by a tribal council of clan chiefs and possibly by a tribal chieftain, we have what has been called a segmentary tribe – one that has come into existence in a classical pattern of expansion in numbers and territory, resulting in a segmentation of the original group into a number of intermarrying clans.

Such classical segmentary tribes are often reasonably equalitarian because all members share common ancestors. But tribes can also result from an amalgamation of different peoples. A population may expand and seize neighboring territories without eliminating the indigenous population. Sometimes they will intermarry with these, absorbing them into the gene pool, but if the dominant group subordinates the defeated peoples, treating them as inferiors, or even as slaves, and refusing to intermarry with them on a basis of equality or near equality, then a new situation will develop. While admitting the conquered people as inferior clans under their political hegemony, the victors may keep the descendants of the conquered clans in subjugation for generations. Such units, comprising a politically unequal agglomeration of various non-intermarrying clans of diverse origins and diverse status, differ markedly from classical segmentary tribes, and may be described as Composite tribal societies.

Nations

Such is the pressure of populations on resources and territories, that not only have band type societies historically given way to tribes, but some tribes have multiplied and expanded at the expense of others, absorbing or dispersing the remnants of the less powerful peoples. In such cases the enlarged and more widely dispersed population may itself become subdivided into a number of related and cooperating

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tribal units. Where external pressures reinforce the internal bonds of loyalty to ensure cooperation under the prestige of a common kinship leader, the term Nation may be applied.

The relationship between the nation and the tribe is apparent even etymologically, for our word "tribe" comes to us from the Latin *tribus*, indicating a third part of a nation. Nations reflect the kinship ideal at its maximum political and territorial extension. Although effective government may become bureaucratic rather than hereditary in principle and the nation may be held together by a variety of economic, political, and social forms, in the thoughts of its nationals a nation is still essentially a large kinship grouping, representing a particular ethnic type with a distinct gene pool, and regarding all its members as kinsmen who speak the same language and share a common cultural, historical, and linguistic heritage. This is an extremely important factor which cannot be over-emphasized. In the absence of an overall consensus, such as is inevitable when society is divided into divergent ethnic groups, one or more groups will always feel that they are excluded from and exploited by the mainstream, majority ethnic group. And individuals will normally be much more prepared to make sacrifices for the good of others with whom they feel they share common bonds of history, culture and kinship.

The Political Organization of the Earliest Nations

The governmental system uniting the earliest nations of Europe was originally rooted in kinship, just as the nation was essentially rooted in kinship, and it emerged from that of the tribe. Settlements were essentially organized on the basis of kinship, as we have seen. Thus the village/town of Hastings in England was originally called *Haest-inga* meaning simply the *inga* or descendants of Haest, and Anglo-Saxon England for long constituted several different kingdoms or national units.

The heads of families in each village in Anglo-Saxon England were regarded as equals, but a village chief was normally chosen for life from among the eligible members of one family which was regarded as senior to the others. The heads of families then assembled to make decisions, under the chairmanship of the village headman. When a tribal decision had to be made, the headman from each village would attend a

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tribal council where he represented his kinsmen under the chairmanship of a tribal chieftain. In the course of time, as larger political units came into being, this elementary system of kinship representation became transformed into a three-tier political structure comprising a hereditary national leader or King; a Council of Nobles representing the local clan or tribal chieftains who met periodically with the king as an advisory body, and a General Assembly of all the adult freemen who, being heads of households, were entitled to be consulted on important matters. This ancient system was anciently reflected in the British system of a King; a House of Lords, comprising the hereditary nobles; and a House of Commons, representing the freemen. Only in recent centuries was political representation in Britain extended to women and other adults who were not heads of households.

It is significant that the English word "king" derives from the Anglo-Saxon *cyning*, literally meaning a "man of the kin," in the sense of the purest descendant from the original tribal founder and therefore the "father" of the living family of descendants. When an hereditary nobility and royalty emerge we talk of a Ritually Stratified society, for hereditary positions of leadership always tend to be reinforced by ritual ceremonial and frequently also by magico-religious sanctions. Kings will be crowned with solemn ceremony and sacrifices may be offered to royal ancestors. The existence of such ritual stratification in a tribal society does not necessarily mean that the hereditary officeholders exercise arbitrary authority. Kings are not necessarily "people who order other people around," as an American schoolchild once told the author. On the contrary, traditional kings reigned rather than ruled. As symbols of tribal and national blood unity, the authority of kings is generally heavily circumscribed by custom. While kinship remains the basis of society, no king may impose any decision on his kinsmen that may be regarded as unjust according to tradition and the dictates of the national culture. Prior to the coming of feudalism, kings were customarily loved and revered as symbols of the unity of the nation-family, the people feeling that the kings belonged to them, rather than the reverse.

In the various social systems which we have so far described, ranging from bands to tribal and national organizations, kinship remained the dominant principle around which social relations

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are organized. Because of the relative simplicity of the societies which we have described, the individual band, clan, or tribal member is able to play a fairly significant role in his community, and habit and custom govern the course of behavior. Decision making is rigidly controlled within traditional limits and the concept of law making, or law giving, in the sense that this implies the deliberate creation of new principles of behavior, is generally unknown.

But as societies become larger and more complex, rivalries may develop within and between kinship groups that threaten to disrupt the community. A village headman or clan chief who is obliged to rely for authority on custom and the willingness of disputants to obey custom may be unable to prevent an internecine struggle from breaking out, something that would seldom if ever occur in a community comprising only 20 or 30 individuals. It follows inevitably that such leaders tend to acquire, through common consent, a degree of authoritative power. This means that when moral persuasion fails, they may use other forms of restraint, including possibly physical intervention to halt a dispute, with the full weight of public consent behind them.

In the earliest *Homo sapiens* societies, and for most of human history, society revolved around the traditionally ascribed responsibilities of kinship cooperation. Only as such societies become more complex and kinship structures began to break down did the old primate principle of dominance and submission, today known as competitive achievement, begin to undermine the principle of ascription by which roles are determined by the order of birth. As new political institutions steadily replace kinship ties, men begin to eulogize intragroup and even individual competitiveness. Participating eagerly in the scramble to win a presidential election or to secure a seat on the politburo in competition with their fellows, they abandon the age-old principle of kinship ascription in favor of a pattern of competitive social mobility and party politics oddly reminiscent of the baboon troop.

Centralized Chieftainships

Accordingly, there comes a time when positions of political and administrative responsibility are reinforced by the right to coerce – which in turn may be reinforced by the means to

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coerce, in the form of a body of armed retainers. In such cases, high office becomes in effect a prize for the successful competitor. In place of kinship leaders who exercise authority restricted by custom on the basis of the consent of the members of society, we find men who regards public offices as spoils to be secured for the sake of the personal benefits that they can bring. Regarding authority as their personal property, they may even seek to maintain their position by coercion or by the deliberate manipulation of public opinion. In such societies kinship may still remain an important element in primary, face-to-face loyalties, and the facade of the old clan and tribal chieftainships may survive. But in reality the tribal kinship structure has been replaced by a competitive power system, and the principles of coercion and manipulation have replaced the principles of ascription and custom. All subordinate offices – earldoms, chancellorships, and even the position of the village headman – come to be allocated to those who support the successful candidate for supreme office, as one of the rewards of personal loyalty.

In a sense, this development represents the beginning of bureaucracy; and the centralization of power in the hands of a single leader has a certain organizational superiority over the older pattern of village headmen, elected or hereditary chieftains, and representative tribal councils. Decisions can be made incisively and enforced ruthlessly. Since by the nature of the power structure, the supreme officeholder is likely to be a man skilled in political reality, the chances that he will make a reasonably effective leader are moderately high. In consequence, centralized chieftainships, in which a single individual or family effectively controls appointments to subordinate positions, arise as an evolutionary necessity wherever they have a greater survival value than the traditional clan and tribal systems which delegate only limited powers to their leaders. The most favorable condition for such a development is likely to be a society troubled by constant warfare, which may be forced to accept a strongly centralized system of social control in order to survive.

Many quite large and complex societies that are not exposed to the threat of war have revealed the ability to live contentedly under kinship-based clan councils and clan chieftains without ever appointing any full-time authoritative officers. In this way,

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the continental Saxons of early Europe lived without kings until they were finally conquered by the renowned "central chieftain" Charlemagne. But whenever there is a degree of political turbulence, with pressure being exerted from outside groups, or whenever migration and war require an effective coordinating system, social power tends to become authoritatively vested in a single individual or lineage. Although in tribal societies the kingship may remain elective within the royal family, centralized chieftainships usually become strictly hereditary in the mode of succession. Indeed the principle of primogeniture – the inheritance of an office by the eldest son or daughter – may often arise as a device intended to avoid internecine dispute following the death of the previous officeholder.

Centralized chieftainships are in effect pyramidal or cone-shaped hierarchical structures, in which the ruler occupies the key position with the power to direct the life of the community in an arbitrary fashion, although in reality such power is frequently limited by traditional moral restraints or by the existence of subordinate pressure groups. In this sense they differ from contemporary totalitarian regimes only by the fact that the administration remains essentially personal because of the smaller scale of society. The problems involved in supervising a large and rambling empire are considerable, and history records many examples of chieftainships which rose and fell in the lifetime of a single individual leader because of an overextension of the state beyond the limits that a single ruler can effectively control.

Feudalism

Feudalism represents the principle of the centralized chieftainship at its most highly organized but still personal and pre-bureaucratic level. In a feudal society the centralized chieftain no longer depends for his authority purely upon tribal ties of kinship with the persons over whom he rules. Indeed, the feudal king no longer "reigns" but now "rules" with largely arbitrary authority. Claiming ownership of the land and all who are born upon it, he allocates the control of geographical districts to subordinate officers who remain solely responsible to his authority.

The contrast between a kinship or tribal society and a feudal society is amply illustrated in the history of Europe. Prior to the

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rise of feudalism, northern Europe remained essentially tribal, each people having its own kin-father, who was designated as the "king". Feudalism combines the authoritative power of a centralized chieftainship with a bureaucratic system of subordinate chieftains or territorial, overlords.

Until the coming of feudalism, Anglo-Saxon kings were known as Kings of the East Saxons, Kings of the West Saxons, or Kings of the English, clearly denoting the fact that their authority was based on kinship. But feudalism introduced a novel concept. Feudalism entered most European countries a result of the need for more highly organized military systems to defend a territory, and often, as in the case of the Norman Conquest of England, by the victory of a military adventurer over an indigenous nation organized more loosely on kinship lines. With feudalism, kings claimed to be kings *of England* (not of the English), or kings *of France* (not of the Franks). A strictly politically-based centralized chieftainship had replaced kinship as the prime determinant of authority. Kings appointed their most loyal assistants to positions of authority, and Norman lords replaced the Anglo-Saxon earls throughout England, erecting mighty castles to establish their rule over the conquered people.

That is not to say that the concept of kinship did not remain important, or that many of the new ruling class (who were racially not different from the indigenous population) did not deliberately take brides from the older noble families of England in an attempt to legitimize their rule in the eyes of the people, so that eventually the Norman-French interbred with the Anglo-Saxons and Vikings of England to become a part of the resultant English nation. But while in continental Germany the idea that a man had to be born of German parents to be a German, this legal principle was no longer true in Britain. Under feudalism, a man belonged to the lord on whose land he was born, Anyone born on the King of England's land became legally the property of the government of England, and so nationality ceased in Britain to be based on descent.

We see the results in modern Britain, suffering from a massive invasion of immigrants from the four quarters of the earth, in that the children of both legal and illegal immigrants, if born within the political boundaries of Britain are regarded by law as "British," irrespective of their ancestry. Many older English, Scot and Welsh people consequently tend to avoid

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calling themselves "British" because the term has become almost meaningless to them, and they choose to call themselves English, Scottish or Welsh, because almost unconsciously they sense that in their minds these terms still imply nationality by descent. Sections of the media, by contrast, work to confuse even that meaning by applying the term English or Scottish, or Welsh, to West Indians, Africans and Asians, born in those respective parts of the British Isles.

Conclusion

If the use of the term "nation-state" were restricted to its original sense of nations which enjoy self-rule as autonomous political entities, instead of being applied to any group of individuals, no matter how diverse and disparate their ethnic, cultural and racial origin, who live under a single government, we would much more easily recognize one of the prime causes of conflict in the world. Political states comprising widely diverse ethnic and cultural groups suffer from built-in cultural fractions. So many postcolonial African states exist in misery because they inherited ethnically meaningless colonial borders, and as a result represent a culturally meaningless agglomeration of quite separate tribal, national and ethnic populations; with the result that the dominant group constantly represses the weaker groups over which it exercises dominion. The same problem is reflected in Iraq, which comprises three quite different ethnic and cultural populations, formerly under the domination of the Sunni Arabs, but hardly likely to live together voluntarily in peaceful, free cohabitation. Nation-states have a moral validity which multiethnic states can seldom claim. Freedom is the right to live with those with whom you share a common bond, rather than be forced to accept the values of an ethnically disparate dominant majority, or to permanently cast your vote helplessly against the rule of those with whom you have no sense of community, and who regard you as part of an alien, dissident "minority." To refer to multiethnic political entities as "nation-states" only confuses subsequent discussion, and, indeed, suppresses the underlying realities of human social evolution, without some comprehension of which it is impossible to accurately comprehend the sociopolitical basis of so much of the dissidence that characterizes the contemporary human scene.

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Book Review

Genetics and the Search for Modern Human Origins
John H. Relethford
Wiles-Liss, New York, 2001
ISBN 0-471-38413-5

The author, a population geneticist on the faculty of the State University of New York at Oneonta, has written a well-organized and most readable book which investigates what for well over a century has been one of the most hotly contested subjects in academe.

As is well known, the study of anatomical traits early established the evolution of man from primate origins and by the middle of the twentieth century most paleontologists had accepted the multi-regional theory of the origin of living humans. I choose to speak of "living humans" rather than "modern humans," in this context, since the latter expression is poorly defined and is capable of many differing interpretations. Although it is widely used by contemporary academic writers, few trouble to provide the specifications by which they discriminate between "modern" humans and their "pre-modern" ancestors. Evolution is essentially a chicken and egg process and it is hardly possible to discover an anatomically modern child that was sired by parents who could be defined as pre-modern. Besides, living humans vary in so many ways that is can be claimed that most of the anatomical features which, taken as a whole, distinguish Classic Neanderthals can be found amongst one or other of the living varieties of man. Only when aggregated together in a single skeleton do they unequivocally mark that fossil to be Neanderthal.

Implicitly acknowledging this problem, Relethford avoids any attempt to delineate the traits that would define "modern human," and explains that the common approach is to "use as many traits as possible to minimize statistical error and evolutionary fluctuations and get an estimate of the average degree of dissimilarity" between fossil remains and contemporary humans.

This is a perfectly sound approach to the study of fossil remains, but it still leaves those who like to speak of the "earliest

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modern humans" guilty of very *ad hoc* judgments, and can result in some very misleading perceptions. Thus a central feature of the arguments of many who write about the Out of Africa theory, based on genetic and anatomical data of both fossils and living populations, is the claim that the ancestors of all living humans reached "modernity" in Africa, and that small populations moved out of Africa into Eurasia as recently as between 120,000 and 60,000 years ago. Although there is massive evidence that other hominids were already present in Eurasia as that time, the strict Out of Africa theory is that these "modern human" migrants totally replaced their non-modern predecessors in Eurasia as a result of either mutual infertility which would imply that the immigrant population was not even of the same species as the indigenous Asian hominid stocks, or a primordial racist refusal on their part to interbreed with the "inferior" native stocks whom they supplanted.

However, a few anatomists have persisted in pointing to the seemingly incontrovertible evidence of regional anatomical continuity from pre-modern into modern populations in certain parts of Eurasia, and claiming that the human populations currently living outside Africa must have inherited at least some of their genes from earlier pre-modern populations of that area, if indeed they had not evolved quite independently from earlier non-African populations. The evidence advanced to support this view of a Multi-Regional evolution is strongest amongst the Mongoloids of Eastern Asia.

During the last century debate also centered on the theory that contemporary Europeans had either evolved from the Classic Neanderthals who occupied Western Eurasia down to around 40,000 years ago, or more likely had contributed *some* genes to the incoming, fully modern Cro-Magnon populations that supplanted them. This view has now been largely rejected on the basis of convincing DNA evidence acquired from Neanderthal fossils. These reveal less similarity with modern European populations than with contemporary East Asian, African or Australoid populations, and are essentially dissimilar from all living humans.

Mitochrondrial DNA recovered from European Neanderthals does not show any reasonable degree of similarity to the mtDNA of contemporary modern Europeans, which is not surprising in light of the vast anatomical differences

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between the Cro-Magnon ancestors of living European Caucasoids, and further recent studies suggest that there vould have been no interbreeding between Cro-Magons and Neanderthals. Indeed, the Neanderthals appear to have been a quite distinct hominid species. But something more surprising has come to light regarding mtDNA of Australoids. mtDNA has been extracted from 60,000 year old fossil remains found at Lake Mungo. But while the Lake Mungo fossil is anatomically more or less identical to living Australoids, that mtDNA does not match that of living Australoids. This suggests that particular variants of mtDNA can become extinct in the course of evolution, which rather throws into doubt the value of mtDNA evidence in tracing lengthy lineages.

Relethford does not hesitate to state his own opinion as to the validity of the Out of Africa theory, taken in its widest sense, as distinct from the narrower version which would restrict migration of already "modern" hominids from Africa to around 120,000 years ago. He agrees that the genetic evidence supports the now generally accepted view that hominids originated in Africa and migrated from thence into Eurasia, and eventually into Australasia and the Americas. But he questions the wisdom of ascribing "modernity" to African populations of 120,000 years ago, if this be taken to imply that there was no further evolution of significance amongst migrant hominids after their arrival in Asia. He also questions whether the new populations from Africa did fully supplant all the older, less evolved, hominid populations already present in Eurasia.

Instead, he quite reasonably assumes that outward migrations may have involved hominids at various levels of evolution at different times over a lengthy period of time. For example, on the basis of genetic evidence, fossil remains found in Western Eurasia imply that Neanderthals, separated from the lineage of: "modern humans" probably as long as 700,000 years ago. He therefore expresses the opinion that while some reasonably evolved hominids did migrate into Eurasia from Africa, there is also some partial validity in the Multi-Regional theory to the effect that much of the evolution which led to the regional disparities in modern populations or races, occurred outside Africa, and, by implication, that the present day populations of Europe and Asia may actually have achieved "modernity" in Eurasia. Many older anatomical anthropologists

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had argued that truly modern *Homo sapiens sapiens* (e.g. Cro-Magnons and their relatives) and would have argued that those who moved from Africa into Eurasia were only "modern" in the sense of having attained *Homo sapiens* status. Ultimately, it would seem, we are faced with a problem of semantics. As long as we regard all living peoples as being equally "modern" and speak loosely of "modern man" having evolved in Africa, as though no subsequent evolution of any significance occurred in the very different and challenging environment of Asia, the debate will surely continue. Even outside Africa we must ask whether the 60,000 year old Australoid fossils of Mungo, which anatomically match living Australoids, we as "modern" as the 40,000 year old Cro-Magnon fossils of Europe, which compare closely with living Caucasoids? Is every living human equally "modern" from the evolutionary point of view?

But Relethford is also interesting in making comparisons between the genetics of contemporary humans, Neanderthals and apes. He provides interesting summaries of the evidence, as for example when he cites a set of comparisons of sequence differences in mtDNA between living humans, Neanderthals and apes, made by Matthias Krings and colleagues. These revealed differences of approximately 10 percent between living humans, 35 percent between living humans and Neanderthals, and 95 percent between living humans and apes.

Relethford and others tend to assume that from the emergence of *Homo erectus* onward, hominids had achieved the ability to spread over a wide range of different environments, and that in consequence there would necessarily have been substantial gene flow between groups whereby the migrant group would tend to reabsorb genes from the parent group, thereby reducing speciation (we use the term here in the broader sense which would include the formation of subspecies). He is correct in stating that this would act as a brake on genetic diversification. However, although we know that such gene flow does take place at a fairly rapid rate amongst contemporary human populations, we would hesitate to assume that it would have occurred automatically and freely in much earlier, more primitive human societies. As one author said somewhat facetiously, cannibalism tended to restrict gene flow, whereas improvements in the arts of cultivating made slavery popular, and increased the gene flow from subordinate to

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dominant groups. Amongst many advanced species of birds and mammals living in feral conditions, populations or races that have not yet lost the ability to crossbreed generally avoid sexual contact because of small physical differences that appear to touch off psychological rejection, thereby preventing evolutionary experiments from being brought to an untimely end as a result of genetic reabsorbtion. If that had not been the case, differentiation into subspecies could never have occurred amongst highly mobile animals. The same reluctance to crossbreed might well have been true of evolving hominids.

Relethford also assumes that continuing gene flow out of Africa tended to work against speciation amongst the human populations that were evolving separately in Eurasia. This is certainly true to the past thousand years or more, when slavery brought a more or less continuous if sporadic flow of slaves from Africa into Asia, and later into the New World. But is he justified in assuming a continuing gene flow from Africa into Eurasia prior to the invention of slavery? The evidence indicates that over the past hundred thousand years at least, technological advance was more rapid in Europe and Western Asia than in Africa (and we might regard North Africa and Egypt as an extension of the Eurasian continent and of the culture of Western Eurasia). In consequence, from that time on few migrant groups could be likely to have moved from the culturally less-advanced Africa into a technologically more advanced Eurasia, until such historical times as modern Africans were brought into Eurasia by slavery.

One interesting subject seldom touched upon by proponents of the Out of Africa theory is the problem of the origin of the Asiatic Negritoes, who anatomically resemble the sub-Saharan African Negroes quite closely. Evidence of an earlier Negrito population can be found in parts of southern Arabia and southern Iran, in the forests of India, the Andaman Isles and the Malayan forests. They also seem to have contributed genes to the population of parts of Southeast Asia, notably Cambodia. It would seem likely that these are the descendants of an early Out of Africa migration of a Negroid people which, remaining in generally tropical climates, did not experience the novel selective forces that helped shape the ancestors of today's Caucasoids and Mongoloids living in more stringent northern climes.

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Clearly, if we are ever to put together the jigsaw puzzle of man's evolutionary history with some degree of finality, it is urgent that extensive genetic surveys be conducted not on the less endogomous though in some cases fairly homogenized populations of our modern cities and advanced societies, but on the few small remnants of ancient populations that still survive relatively unmixed from past ages. The genetics of these rapidly disappearing populations are of major importance to any hope we may have of success in the search for the evolutionary history of our modern living populations, and we probably have only a few decades left before they become absorbed into the genetic cauldron of twenty-first century humanity.

James Jamieson

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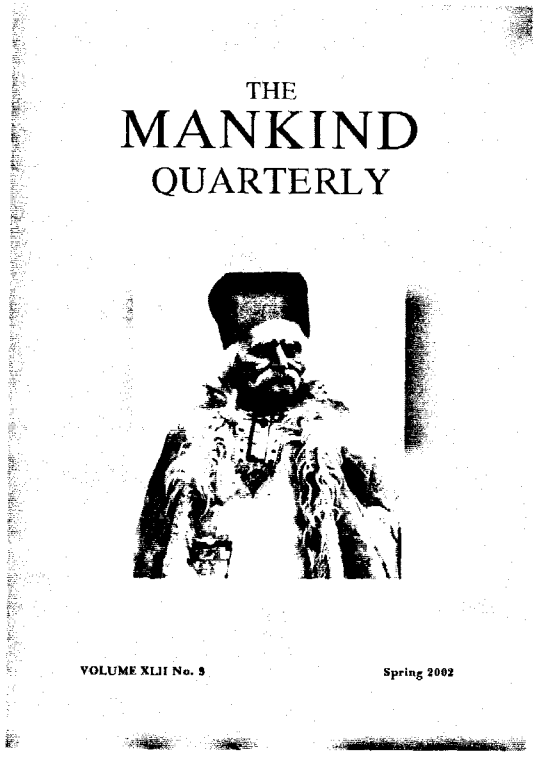

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